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ABSTRACT

A project provided vocational teachers with inservice field-based clinical experience with handicapped students to develop pedagogical competencies. It also implemented a delivery system for providing assistance to vocational teachers who have handicapped learners mainstreamed into their classrooms. After the types of handicapped students were identified, a delivery system to aid in the development of pedagogical abilities of vocational teachers was implemented. Vocational teachers received both formal instruction and individualized instruction in a clinical atmosphere to develop the necessary competencies to serve the needs of handicapped students. Over 15 teachers of vocational technical education from six area vocational schools in the Pennsylvania State University's service delivery area received instruction in how to work with handicapped students mainstreamed into their classrooms. This instruction included teaching strategies, instructional approaches, technical information on the different handicapping conditions, and alternative evaluation techniques. (Following the seven-page narrative are 92 pages of appendixes containing sample materials used in the inservice and materials distributed to teachers--teaching techniques and strategies for students with various disabilities, vocational modifications, alternative testing methods, and a handicap check list.) (YLB)

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ED283953

FINAL REPORT

Enhancement of Pedagogical Abilities of Vocational Teachers to Serve Handicapped Students in Regular CBVE Programs - Year 2

(The Pennsylvania Department of Education Contract Number 86-6006)

Project Director:

Connie D. Baggett
Assistant Professor

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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The Bureau of Vocational and Adult Education
The Pennsylvania Department of Education
Harrisburg, Pennsylvania 17108

October 1, 1986

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Abstract

Statement of the Problem

Vocational teachers need to better understanding and accept handicapped students and be prepared to accommodate individual differences among students in regular competency-based vocational programs. There is a need to develop a comprehensive ongoing inservice program for professional vocational personnel to better meet the mandated requirements for handicapped students. The project addressed the ten competencies needed by teachers that were specified by The Pennsylvania Department of Education.

Objectives of the Project

Two objectives were selected for this project. They are as follows:

> To provide vocational teachers with inservice field based clinical experience with handicapped students to develop pedagogical competencies, and

> To implement a delivery system for providing assistance to vocational teachers who have handicapped learners mainstreamed into their classrooms.

Procedures

Once the types of handicapped students were identified, a delivery system to aid in the development of pedagogical abilities of vocational teachers was implemented. Vocational teachers received both formal instruction and individualized instruction in a clinical atmosphere to develop the necessary competencies to serve the needs of handicapped students.

Results

Over 15 teachers of vocational technical education from 6 area vocational schools in The Pennsylvania State University's service delivery area received instruction in how to work with handicapped students mainstreamed into their classrooms. This instruction included teaching strategies, instructional approaches, technical information on the different handicapping conditions, and alternative evaluation techniques.

Enhancement of Pedagogical Abilities of Vocational Teachers
to Serve Handicapped Students in Regular Competency-Based
Vocational Programs - Year 2

Introduction

As mandated with the passage of Pulbic Law 94-142, The Education For All Handicapped Children Act, handicapped students are those who are "different" because of physical, mental, and emotional abnormalities such as hearing impairment, poor vision and speech difficulty. Legislation also states that handicapped and disadvantaged students are assured of education in a regular school environment with the least restrictions. Even though vocational education has mainstreamed students, information obtained tends to indicate that handicapped students are not effectively assimilated in the public school system. Vocational educators are less than confident in their abilities to serve the needs of handicapped students. Now more than ever, vocational teachers need inservice pedagogical skills and methodologies to teach handicapped students.

Vocational teachers must be provided with opportunities to master competencies required to meet the mandated responsibilities for educating secondary handicapped students. According to the Pennsylvania Department of Education, the majority of teacher preparation programs have traditionally not prepared regular vocational teachers to accommodate these special needs students.

A review of literature (Thornton, 1979; Farmer, 1980; and Gartner, 1974) reveals that the traditional approaches for providing inservice training have been to schedule workshops, seminar, or university courses. These approachers have met with mixed results. On the other hand, Greenwood and Morley (1978) conducted a survey of vocational administrators and identified

inservice education (teacher inservice work day) as their most important activity to improve program and services for handicapped students. Another finding that emerged from this study was the lack of education and training of certified teachers to work with handicapped learners.

MacArthur (1982, p. 45) believed that inservice training of this nature be directed at groups of people who can work together in a given school building. He frowned upon the training of 20 teachers from 20 different schools and he beleives that the in-school approach encourages collaboration and cooperation. This project used a combination of workshops and individualized instruction to help teachers develop pedagogical skills.

Need for the Project

Through federal funding, special facilities and classes have been implemented specifically for the instruction of the special needs students. With inflationary trends, school districts have been forced to cut programs. Special needs student services have become part of these cutting measures. As a result, special needs students have been mainstreamed into regular programs.

This change from special classes for the handicapped to maintreaming into regular vocational programs causes much anxiety among the regular vocational classroom teachers. Although much has been accomplished both nationally and in this state in preparing regular vocational teachers, a great deal of work is still yet to be done. Each handicapped student brings a unique set of characteristics, learning needs and limitations, and physical considerations and limitations into the vocational classroom. The regularly prepared vocational teacher is not equipped to effectively engaged and deal with these variables. The frustrations of surviving in today's society with limited or no job skills places an added burden on the handicapped learners attempting to cope with the rigors of vocational training. These handicapping

conditions present a new set of roadblocks to the teaching/learning environment. Vocational teacher often have difficulty coping with and understanding how these constraints affect the handicapped students. The frustrated teacher gives up, is not motiviated, feels deserted, and fails to maintain a challenging program of instruction.

Methodology

This project used one primary method: one-on-one instruction to the vocational technical teacher. This method was highly integrated to build upon the knowledge and experience gained in technical materials distributed to the participants. The project followed the steps listed below.

1. Nine vocational technical schools in the central region of the state were contacted to obtain a definite commitment to the project (see Appendix A). Schools responded through a prepaid addressed postcard. Since many of these schools have received previous assistance, only those schools that show greatest need were chosen to participate in the project.
2. Each school identified those teachers who were in greatest need of assistance in instructing handicapped students. The school selected the teachers who had several handicapped students mainstreamed into their classroom and were teaching subject matter in which students were performing poorly. These teachers received one-on-one assistance in instructing handicapped students.
3. Each vocational teachers selected by the schools received 2 1/2 hours of assistance weekly for 9 weeks. This assistance included, but was not limited to, performing readability checks (see Appendix B), development of simplified instructional aids (see Appendix C), developing instruction strategies (see Appendix D), identification of simplified

examples (Appendix E), task information sheet development, and test item construction along with alternative evaluation techniques (Appendix F). A log of all teacher visitations were documented (see Appendix G). The visitation log was completed at every session of one-on-one instruction and assistance with the vocational teacher. This form identifies the lesson taught, the tools and equipment used, teaching aides used, problem observed and strategies for correcting the problem. At the end of each one-on-one session, a detail discussion with the vocational teacher took place. A clinical approach was used to assist the teacher in identifying and solving problems occuring in instructing the handicapped students. A copy of the visitation log was left with each teacher for future reference.

Use of Advisory Personnel

Persons most closely aware of the needs of the local schools were used as advisory personnel for this project. Each school was treated as an individual project as far as the advisory personnel were concerned. Local school directors, supervisors of pupil services, guidance counselors, resource teachers and school's vocational teachers served to identify what problems they thought were most worthy of being solved. As such, a central or overall project advisory committee was not established. However, persons from the intermediate unit and university personnel were consulted whenever the need arose.

Results

Through this project 6 vocational schools received service from the activities of this project in instructing handicapped students. Of these 6 schools, 15 vocational technical teachers received individualized one-on-one instructions.

One-on-one individualized instructions was most effective because the vocational technical teachers had the opportunity to interact with the university resource person. Nine teachers received this type of assistance and a visitation log (see Appendix G) was completed at each classroom setting. Below are a list of problems observed and used as a bases to assist the teachers. Materials distributed to classroom teachers are listed in Appendix H. Some concerns that materialized from this project are:

1. Lack of student concentration and motivation
2. Problem with measuring
3. No activity for the fast student
4. Instructional materials lacking especially for special needs students
5. Students who had finished projects or learning activity sat idle
6. Students are not able to work because of limited facilities
7. Students enter programs at different stages during the year and have difficulty being part of the class and lack prior instruction and practice that other students received
8. Better cooperation with resource room teacher needed
9. Not enough projects oriented toward girls
10. Lack of direction given to students, they do not know what to do
11. Skills difficult for some students
12. Students have difficulty judge distances
13. Students have difficulty determining the amount of force to apply
14. Students have reading and mathematical difficulty
15. Student have problems taking tests
16. Teacher presentation of instruction needs improving
17. Assignments given verbally with little explanation
18. More time needed to allow students to record information from the chalk board to notes

19. Improper use of film strips by teacher

20. Special needs students not experiencing positions of responsibility in the classroom and/or laboratory.

Project Summary

Teachers seem to have few problems with specials needs students. Most problems stem from a lack of knowledge about curriculum planning and the use of classroom manuals and materials. In some cases, adjusting the reading levels of texts and examination may be the best improvement. Many students are functioning at low reading and mathematic levels. They have difficulty with materials written in the technical language. A teacher workshop on curriculum planning and use of materials may be beneficial.

Some teachers feel that there is difficulty teaching special needs students because they are not informed of the nature and extent of the student's handicapping conditions. This information is sometimes withheld to prevent teachers from lowering their expectations of the students. Sharing this knowledge with the vocational teachers is the discretion of the guidance department and school administration. In serious cases, such as a student with epilepsy, the teacher should be informed of the condition as a safety precaution if the student may be operating a potentially dangerous machine. At any rate, teachers may have problems accepting the condition because they do not have knowledge of the condition.

Reference materials and involvement in individualized education plan (IEP) formulation could help teachers develop more competence and confidence in working with handicapped students. Much materials that were supposed to be used as guides were used without any modification for handicapped students. The regular students had difficulty with the materials and the handicapped students (mostly educable mentally retarded and learning disabled students)

performed extremely poor in many instances. Curriculum materials modification could solve a large number of the problems associated with teaching the handicapped.

This project was planned with the idea that a second year of the project would be operated. Unfortunately, many teachers within the central region of the Commonwealth will still be strained in the classrooms with much frustration because they lack the skills needed to teach these special populations. There exist a need for this project to continue so that the educational opportunities for the handicapped will improve and expand.

Appendix A

Letter to School Directors

THE PENNSYLVANIA STATE UNIVERSITY
102 ARMSBY BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Agriculture
Department of Agricultural and
Extension Education

Agricultural Science
814-863-3824

October 1, 1985

Dear :

As part of a funded project through the Division of Adult and Vocational Education, Pennsylvania Department of Education, your school has been selected for voluntary participation in a program to increase the teaching skills of those teachers working with handicapped students. These teachers may be in any of the vocational areas.

Specifically, the project will provide a person with experience and knowledge in the education of the handicapped to work with your teacher(s) on a one-to-one bases to better meet the needs of handicapped students in the classroom or shop. This person will be able to help in the following areas relative to handicapped students:

-- assist with individualized instruction
-- assist with adapting or adjusting teaching techniques
-- assist with the modification of instructional materials
-- assist with the administration of quizzes and tests
-- assist with the identification of learning difficulty
-- assist with developing quizzes and tests
-- assist with developing alternative testing techniques
-- assist with developing alternative grading systems
-- help teachers to develop skills in areas mentioned above

Each vocational teacher <u>selected by you</u> for this project will receive nine (9) weeks of assistance at not less than one day per week. Assistance will be at no expense to your organization. These expenses are paid by the Pennsylvania Department of Education. The main emphasis of this project is to <u>help teachers develop skills</u> in working with mainstreamed students.

AN EQUAL OPPORTUNITY UNIVERSITY

Additionally, I am available to conduct workshops or inservice programs for your teachers on educating the handicapped student. Such workshops may include legislation affecting vocational education, identifying the handicapped students, helping handicapped students feel a part of the instructional process, and sensitizing teachers to the problems of these students. Other possible meetings may include addressing specific concerns with the guidance staff from the sending schools as well as from your organization. There is a great need for guidance counselors to be aware of problems encountered by special needs students in the trade and industrial classes, i.e. which category of special needs students is most likely to be successful in such a program?

If you are interested in cooperating with this funded project, please contact me at your earliest convenience.

Sincerely,

Connie D. Baggett
Assistant Professor and
Project Director

CDB:lcm

Mr. James E. Harpster
Juniata-Mifflin AVTS
Box 1010, Pitt St. & Belle
Lewistown, PA 17044

Mr. William L. Springer
Center County AVTS
Pleasant Gap, PA 16823

Mr. Nelson F. Gish
Cumberland-Perry AVTS
110 Willow Mill Road
Mechanicsburg, PA 17055

Mr. Dalton E. Paul
Franklin County AVTS
2463 Loop Road
Chambersburg, PA 17201

Mr. John L. Riddell, Jr.
Mt. Joy AVTS
Box 237
Mt. Joy, PA 17552

Mr. James M. Buggy
Northumberland County AVTS
1700-2000 W. Montgomery Street
Shamokin, PA 17872

Mr. Garland E. Gingerich
York County AVTS
2179 Queen Street
York, PA 17402

Mr. George Seiler
Bradford County AVTS
R D #1
Towanda, PA 18848

Mr. John M. Kauffman
SUN AVTS
815 E. Market Street
New Berlin, PA 177855

Appendix B

Computerized Readability for Typical Trade and Industrial Text

Readabilities for: Auto Mechanics - Theory + Service

Pg # → 93 163 287 407

Readability Formula	Sample Number 1	2	3	4	5	6	Average
SPACHE	4+	4+	4+	4+			Invalid
DALE-CHALL	16+	11.6	15.7	16+			Invalid
FRY	12+	10	12	12+			Invalid
FLESCH	41	56	47	21			41
RAYGOR	12+	9	12+	12+			Invalid
FOG	15	11	14	17			15
[illegible]	12.4	8.4	12.4	13.9			11.3

pg #'s

81 278 355 413 475 527

Readabilities for: ON HIGHWAY TRUCKS

Readability Formula	Sample Number 1	2	3	4	5	6	Average
SPACHE	4+	4+	4+	4+	4+	4+	Invalid
DALE-CHALL	16+	11.8	13.0	14.5	16+	12.0	Invalid
FRY	10	12	12	10	11	12+	Invalid
* FLESCH	55	44	47	59	43	36	47
RAYGOR	12+	12+	12	12	12+	12+	Invalid
* FOG	15	16	14	13	18	18	16
* SMOG	10.7	12.4	10.7	10.7	12.4	13.9	11.8

How to Read Readability test Results

FLESCH: Gives a score between 0-100 with 0 being extremely difficult and 100 being extremely easy.

0-30 Very difficult	Scientific
30-50 Difficult	Academic
50-60 Fairly difficult	Quality
60-70 Standard	Digests
70-80 Fairly easy	Slick fiction
80-90 Easy	Pulp fiction
90-100 Very easy	Comics

FOG: Gives grade level of material. Based on a count of the number of words with three or more syllables, and a count of the numbers of words and sentences.

SMOG: Also gives grde level of material. Used on materials for 3rd grade or higher. Based the same as FOG.

Appendix C

Simplified Instructional Aids

with Project Comments

D I E S E L

QUESTIONS TO BE ANSWERED BY THE FILM
THE CRANKING CIRCUIT AND HOW IT WORKS
FILM NO. 985529

1. What are the four component parts of the cranking circuit?

2. What function does the key switch serve?

3. What function does the solenoid switch serve?

4. What are the main parts of the solenoid switch?

5. How does the starter motor function to start the engine?

6. What is the over-running clutch, and how does it operate?

7. What are the component parts of the over-running clutch drive?

8. What is the inertial type clutch, and how does it operate?

SUGGESTIONS

-- Break these questions up to leave room for answers

Example:

1. What are the four component parts of the cranking circuit?

   a.

   b.

   c.

   d.

-- Discuss the the film before you show it to guide the students. Highlight the importance parts. This helps to increase interest and attention. Some form of incentive might also help.

-- The slower students might benefit by seeing the film again within the next few days.

Appendix D

Developing Instruction Strategies

--Planning an Effective Lesson

LESSON PLANNING FOR EFFECTIVE TEACHING

Course Diesel Mechanics

Unit Fuel Systems Instructor Mr. Good Teacher

Problem or Competency Area Maintaining Fuel Flow School Your H.S., USA

LESSON PLAN TITLE: Checking Fuel Flow

Time Allocation: Class _____ Period _____ Length 30 mins.

References:

PSU Instructional Material Service, Diesel Engines--Maintenance and Trouble Shooting Fuel and Air Systems. 1980.

Teaching Aids/Instructional Materials:

- Injector nozzle and fuel line poster
- Used injector nozzle and lines in CAT crawler

Situation:

The students have learned how the injection system works and are now ready to learn how to disassemble fuel lines and check proper fuel flow.

Student Performance Objectives:

Given the tools and materials, the student will disconnect the fuel line from each injector nozzle and assess correct fuel flow at those points according to factory specifications.

TEACHING PROCEDURES

1. Interest Approach:

- Display clogged injection lines and worn injectors for student to see.
- Display disassembled and extremely clogged and dirty fuel filter

2. Teaching Strategies/Presentation/Explanation Steps:	3. Student Performance/Application Steps:
-discuss and identify high pressure fuel lines and injector nozzle	-listen, take notes, ask questions
-explain/demonstrate how to loosen fuel lines	-observe, ask questions
-demonstrate proper cranking of engine and check for steady uniform fuel flow from each line.	-observe, ask questions
-demonstrate installation of new lines.	-observe, ask questions
-observe and assist students	-practice removing lines and checking fuel flow.

4. Lesson Summary Activity:

Each student will have a chance to release the fuel line using the proper wrenches and check fuel flow from each. This will reinforce the demonstration and help the students to remember the proper technique and its importance.

5. Evaluation Step:

Students will be evaluated on their adherance to manufacturer´s specifications.

Appendix E

Instructional Suggestions

Suggestions for Handling Technical Materials

1. Break definitions up into categories and underline terms

   Example:

   A. Vehicle lamps/lights:
      1. Back-up lamp (definition.....)
      2. Clearance lamps .....
      3. Fog lamps .....

   B. Types of Vehicles or Vehicle Classifications:
      1. Antique Motor Vehicles (definition.....)
      2. Bus .....
      3. Classic Motor Vehicles .....
      4. Emergency Vehicles .....

   C. Define Abbreviations (Acronyms):
      1. ASME Code: American Society of Mechanical Engineers
      2. ASTM .....
      3. CGA .....
      4. DOT .....

   D. Windshield/window terms:
      1. .....(contine as above)

2. Be sure to take time out to get students started on this. Often times the instructor has to serve as a role model and motivator. If you can get them started off on the right foot, they will be more likely to succeed. Show them that this important to them and to you.

3. The reading level of the inspector booklet is well above high school level as determined by the FOG readability test. Therefore, the content may require that the instructor "gear down" the reading level to assist student comprehensive.

4. Blue ink is hard on the eyes, especially under florescent lights. In addition, the print is very small. The possibility of retyping the booklet should be considered seriously so that the print could be made larger and darker.

5. Maybe, it would be possible to work with the English teacher to get the students to read some of the more difficult parts as an English assignment. This would only work if a) all of the students in diesel mechanics have the same English teacher, b) she/he is willing to cooperate, and c) you work directly with the teacher to prevent any frustration or misunderstanding. The definitions could be used as spelling and vocabulary exercises.

6. During the time students are to learn this material, spend some classroom and/or laboratory time to reinforce what they have read. A few minutes each day may encourage the students and increase the chance of success.

7. This has been stated before, but I think it would be very useful if you set aside a specific time each week as a research/study time for the students. There would be no laboratory activity so that distractions are minimized and students could study together or individually.

8. It may also be that students just do not have enough time in a two week period to read through this whole book, especially if they are also expected to keep up with their laboratory assignments.

Appendix F

Instructional Evaluations

York County Area Vocational-Technical School

2179 South Queen Street • York, Pennsylvania 17402
Telephone (717) 741-0820

GARLAND E. GINGERICH
Director

JOHN S. FITZ
Business Manager

ANDREW M. POLLOCK
Principal

JAMES B. GABLE
Assistant Principal

JOHN B. YOHN
Assistant Principal

JAMES H. SMITH
Supervisor
Adult Education

April 28, 1986

Ms. Darla Boyer-Locke
308 Armsby Building
Penn State University
University Park, PA 16802

Dear Darla:

Enclosed is a copy of the survey you requested and the results of the transmission test. Would you leave your supervisor know that I feel this project was very worthwhile and your assistance was very much appreciated.

I am anxiously waiting to see if your suggestions for the State Inspection course will change the failure rate in my shop next year. I think that they will.

Thanks again for all your assistance. Good luck in your endeavors.

Sincerely,

Donald E. Slenker
Diesel Instructor

DES:ddb

Enclosures

STANDARD TRANSMISSION TEST RESULTS

Student #	Film #1 Discussion During Film	Film #2 Discussion After Film	Film #1 4 weeks Follow-up	Film #2 4 weeks Follow-up
1	75	55	60	55
2	80	55	absent	
3	75	absent	55	15
4	absent	55	55	15
5	70	60	70	50
6	absent	absent	70	80
7	25	absent	absent	absent
8	80	"	"	"
9	70	"	"	"
10	70	"	25	40
11	60	65	absent	absent
12	absent	absent	60	20
13	55	65	50	55
14	70	absent	80	55
	730	355	545	445
	Means = 66	Means = 59	Means = 61	Means = 49
	n = 11	n = 9	n = 9	n = 9

Appendix G

Log of Teacher Visitations

LOG OF VISITATION
to
Enhance Pedagogical Skills of Vocational Teachers
To Work With Handicapped Students

Name of School/AVTS: _____

Name of person(s) contacted or working with: _____

Position of person(s) contacted or working with:

Teacher _____ Guidance Counselor _____

Director _____ Pupil Services _____

Number of students in class: _____

Type of program (i.e. cabinet shop): _____

_____

Method or approach used by the teacher (i.e. lecture, demonstration): _____

_____

_____

Type of lesson or activity being taught (i.e. sanding cabinets): _____

_____

Type of tools being used (i.e. orbital sanders): _____

_____

Type of material being used (i.e. soft wood, sheet metal): _____

_____

What kind of handicapping condition(s) identified:

L D _____ SED _____

EMR _____ Other _____

- over -

Appendix H

Materials Distributed to Teachers

STRATEGIES TO HELP TEACH STUDENTS WITH LEARNING DISABILITIES

Note:

You may be completely unaware that you have learning disabled students.

Signs of Learning Disabilities:

1. Poor ability to sustain attention to the work to be done
2. Impulsive behavior
3. Inability to think or remember
4. Poor organization of tasks
5. Inability to monitor one's actions
6. Inability to maintain a train of thought
7. Poor physical coordination
8. Hyperactivity and hypoactivity
9. Difficulty in reading, writing, arithmetic, spelling
10. Distractibility
11. Extreme variation in functional ability
12. Difficulty in handling language
13. Speech and hearing disorders
14. Lack of resourcefulness

STRATEGIES FOR MODIFYING TEACHING TECHNIQUES AND MATERIALS

1. Listening Aids

Help the student to listen to lectures and demonstrations. Explain the meaning of any gestures, hand waving, motions or facial expressions. Explain the use of a raised or lowered voice, or pauses in the delivery. Be aware of words that may have double meanings such as hear, here; or their, there.

Help the student to develop visual images of main points. Use rhyming words when possible. Or use the first letter of each main point such as this for preparing a car fender for painting.

RCPPB or Remove, Clean, Prime, Paint, Buff.

2. Reading Aids

Show them how to take notes for your class. Give them a list of new words along with the appropriate definitions. Cooperate with the reading specialist to help the LD student read the required materials. You may use audio tapes, demonstrations or verbal explanations to enhance learning. But be sure to encourage the student to read.

3. Thinking Aids

- Ask students to describe a task they have learned and ask LD student to watch another student complete the task.
- Give the student a disassembled machine or tool and ask them to assemble it.
- Ask the student to explain why a piece of equipment works or how to adjust a piece of equipment.
- Give the student a chance to troubleshoot a machine. Set up a car that will not start and let the student find out why.
- Conduct brainstorming sessions to find solutions to a problem.
- Teach the LD student to organize his or her notes.
- Have the student plan a major event and organize activities for the event. For instance, plan a chili supper or a class party or set up an assembly line to produce a product.
- Have the student plan a field trip. Give him or her the destination and let him or her plan the time of departure, several stops, and return time.
- Provide the student with a complex problem. Let him find the solution and record it.
- Have the student set up an evaluation for the product produced in the laboratory. Have the student decide what would be an acceptable product and why.

4. Speaking Aids

- Be sure the student is enrolled in supplementary speech class, reading lab or remedial reading courses.
- Make a glossary of the key words relating to specific vocational skills. Provide a picture of the process or item to help the LD student pronounce and learn the word.
- Encourage the student to demonstrate a skill and tell other classmates how to do tasks.
- Encourage students to think through what they are going to say, before speaking.
- Provide students who are hyperactive talkers with a separate place to study. Arrange for them to listen to tapes. Remove them from a situation where they disrupt other students and themselves.
- Provide or recognize opportunities to build self-confidence and give praise.

5. Math Aids

- Encourage students to learn the basic units of standard and metric measures. Rulers and other measuring instruments should be available to give students as much "hands-on" information as possible.
- Allow the use of calculators, when and where possible, to help students solve problems and eliminate errors caused by math processes.
- Use visuals, tactile materials, and demonstrations to solve vocational math problems.
- Work with special education and math teachers to help LD students obtain and use important math skills. Let the math teacher know what kinds of skills are needed and get a learning disabilities specialist to help teach skills.

6. Writing Aids

- Encourage the student to write out ideas to the best of his or her ability, preferably in a sequenced outline form. Do not overemphasize spelling or mechanics.
- Encourage students to draw simple pictures or diagrams where possible.
- Be sure to keep samples of the student's successful work outlines or diagrams. This will show the student that he or she is progressing.
- If a student is reluctant to do outlines or diagrams, ask the student to express ideas orally. Then outline ideas as the student talks, showing how his or her ideas would appear in writing.
- Allow the learning disabled student to acquire copies of classmates' notes to see the important points.
- Use a tape recorder to record class lectures or demonstrations and allow students to borrow the tapes for home or out-of-class listening.
- Give oral exams if necessary.
- Provide students with notetaking skills, such as taking down key words or concepts and organizing notes on the paper.

Know How Your Student Learns Best

- Visual
- Auditory
- Kinesthetic (tactile)

Note: Arizona State University, Demonst. Resource Centers have developed a "Parallel Alternate Curriculum" (PAC, 1979) for secondary level instructors. It is designed to help instructors meet the educational needs of all students. You may ask your guidance staff or special needs instructor to order this material for school wide use.

Suggestions for presenting content are listed below:

- lecture/discussion approach: develop brief outline of planned material and present to class before the lecture
- audio visual presentation: movies, slides, filmstrips, video, radio, transparencies, records
- guest speakers

- small group discussions
- individual discussion with instructor
- programmed learning: either reading or a combination of audio visual and reading
- reading: silently, simultaneously with taped version, listening to teacher or other student read aloud, listening to a paraphrased version of the material and following with charts, diagrams or printed material
- field trips
- projects: "hands-on" approach to making a model or other art projects that help establish academic concepts, facts, etc.
- peer tutoring outside of the classroom
- buddy system within the classroom
- contracts: establish prior expectations for achievement for grades
- work-study experience: limited time within the classroom, majority of time in the work field
- independent study: established agreement between teacher and student
- mini-course: content units broken into smaller learning components; students not responsible for large units of information at one time, but smaller units
- open classroom: large teaching area utilizing team teaching approach
- Learning Centers: smaller areas of classroom where individual concepts are taught through self-motivating materials (possible audio visual)
- note-taking: high-achievers take notes with carbon paper to give to low-achievers
- course syllabus
- discovery of learning: Students are given a problem situation where no procedures are established and must develop their own methods for finding solutions, facts or drawing hypothesis
- supplementary texts and other written material: high interest and low vocabulary reading material

<u>Some suggestions for alternate testing procedures are listed below</u>:

1. Open test: Students use textbooks, notes, study guides, etc. Short-answer and essay responses are most appropriate with this format.

2. Closed Tests: Students must rely on skills, concepts and facts they have learned or mastered without the use of notes or textbook. Multiple choice, true/false and matching type items are most appropriate with this format.

3. Teacher reads test and student responds orally, in writing or both.

4. Reduce reading level of tests.

5. Taped tests: Students listen to pre-recorded tape of the test and respond on answer sheets.

6. Small group test

7. Student-made tests

8. Take-home tests

9. Alternative projects

10. Oral tests or oral reports

11. Student answers questions on tape recorder for teacher to correct later.

12. Students administer test: Competent peer administers test orally and can either write down student responses or have the student write his or her own response. The format is recommended for use with individuals or small groups.

Note:

All of the information and examples used here were taken directly out of Puzzled About Educating Special Needs Students? A Handbook on Modifying Vocational Curricula for Handicapped Students, University of Wisconsin-Madison. If you would like more information you may contact your school's special needs instructor, resource person or you may contact Dr. Connie Baggett at the Pennsylvania State University.

Figure Six

Techniques and Strategies for Teaching Learning Disabled Students

Reading

1. Evaluate the readability (reading level of all chapters of a text, manual, pamphlet or handout.
2. Have available materials at many reading levels - from elementary to college level.
3. Record lectures.
4. Have recordings of texts available. These may be obtained commercially or have students record them for extra credit.
5. Request easier-to-read materials from publishing companies.
6. Texts that are easier to read at any reading level usually have the following characteristics:
   a. pages that have enough blank space so as not to be confusing; this is especially true when there are pictures or diagrams involved.
   b. bold print or capital letters or different colored ink for important subject headings.
   c. vocabulary in bold print or defined on the same page it is used or at the end of the chapter.
   d. a glossary and index - the glossary should include a guide to pronunciation.

There are several different methods by which you can determine the readability of instructional material. Check with the special needs personnel of your school, your vocational director or your State Department of Education consultant. Readability is not at all difficult to determine and will save you and your students hours of frustration and difficulty.

Readability is only one concern. Let's look now at the questions of goal setting, giving directions, presenting material, note taking, vocabulary, examinations, skill acquisition, behavior and evaluation and grading.

Goal Setting

1. Allow each student to experience success based on his or her ability and, when necessary, modification of instruction.
2. Tell students precisely what you expect them to memorize or know. Example: "You must memorize this procedure." "You don't have to memorize this; you will have the table to consult."
3. Tell them precisely what you expect them to produce.
4. See if they agree that they can meet your expectations.
5. Tell the student each day or week that separate and discrete goals are expected.
6. Set up contracts with students who are not producing.

Goal Setting (cont.)

7. Establish short and long term goals for each student, based on the student's ability and continued progress.
8. Decide whether it is memorization or understanding that is more important.
9. Emphasize quality or quantity; not both.

Giving Directions

1. Give only one or two directions at a time and check to make sure that they are understood.
2. Very specific instructions -- leave spaces.
3. Ask students to put your directions into their own words.
4. When there are written directions, try to make sure that each section of an exercise has its own directions; even if this means that you must duplicate them.
5. Read directions to the class.

Presenting Material

1. If you cannot read a mimeographed handout of your own, think about the student who has troubles without this added frustration.
2. Break down complex ideas and tasks into smaller component tasks.
3. When presenting material, explain a phrase or a sentence at a time, and pause. Slow down to 55 words per minute (and save!).
4. Decide what prerequisite skills students need to successfully handle the material presented. Do your students have them?
5. Write important phrases on the board as you say them. Seeing and hearing at the same time acts as a reinforcement.

Note-taking

1. Print information on one side of the board at a time...walk to the other side and continue... come back to the first side and erase. Then, start all over. This gives the student a chance to copy as much information as possible. Make sure to print. Teach your groups how to outline, scan for key information and locate answers in the material.
2. Leave blanks in a hand-out.
3. Emphasize important material in some texts with a colored "hi-lighter." Let your weaker students use the texts that you have thus outlined.
4. Use overhead - keep notes.
5. Decide what material the student really must know and what material must be memorized. If a student understands a concept, he or she will retain it better than if it is simply memorized.

Note-taking (cont.)

6. If students are required to copy outlines or long passages, either from lecture or from the board, mimeographing the material helps.

7. It may be easier for the student to memorize material if it is mimeographed than just in lecture form.

8. It is helpful for the instructor and the student to have the five or ten main points of the lesson (phrases are enough) in front of them during the class. Mimeograph and leave plenty of room between each heading for the student's notes. Instructors might ask the student to keep these in a folder or notebook. This collection of notes gives students with poor memory and poor organizational abilities something to both organize their thinking and help them remember.

9. Outline the work for the entire week, day by day, including pages to read, homework assignments, projects and so forth.

10. Demand organization from the students; folders with pockets are cheap and re-usable each term.

11. Use a student that you know is a good notetaker for getting information to one who is not. Use carbon paper, xerox, etc.

12. Tape your lecture.

13. It is often difficult for students with learning problems to generate a procedure operation on their own. It is helpful to return to basic principles which are involved in each new procedure.

14. Pictures in textbooks help the student to visualize and conceptualize. However, it may be necessary to coordinate the picture with the part of the text it represents. Color coding may be helpful in these cases.

15. It is important to associate symbols with concrete examples. Flash cards can be used with picture examples.

16. Asking students to visualize and possibly act out the steps in an operation may assist them in learning.

17. The ability to read charts and graphs may be a skill the student has never acquired. It may be necessary to teach this concept as a separate skill.

18. Reviewing daily and going back to already-learned ideas helps students with learning difficulties. It is surprising how fast students may forget what they seemed to know well.

Vocabulary

1. Define terms in words as simply as possible. If one word in a definition is not understood, the whole meaning can be lost.

2. Use operation definition. That is, "what is it used for" can be most effective. Remember to evaluate on this basis, too.

3. Deal with new vocabulary by relating it to words and terms that have already been learned.

4. Always place vocabulary in the context of a sentence or paragraph.

Vocabulary (cont.)

5. Use the words in the context of the job or other related area so that specific examples stimulate interest and motivate the student to learn and remember. Make it funny or absurd to help memorizing. Example: quenching treated steel makes it harder and "not thirsty." Draw some steel drinking.

6. Have students put new vocabulary into their own words and give examples: "Tina drew on the metal with a scriber."

7. If applicable, show the language root of the word, and divide the syllables according to pronunciation.

   Example: py rom et er - an instrument for measuring very high degrees of heat, as in a furnace or molten metal.

   "John measured the temperature of the furnace with a pyrometer."

Examinations

1. Recognition is easier than recall. Can you evaluate this way?

2. Avoid essay questions, especially when there are students in the class with difficulties in writing effectively.

3. Keep language simple and directions short. Avoid sentence structure which may be difficult to understand.

4. Keep directions short, and repeat for each question.

5. For fill-in questions, supply a word list. Students with learning difficulties often have word-remembering problems. They may know the concept and be able to recognize the word without being able to recall or spell it.

6. For multiple choice, the longer component should be on the left and the shorter on the right.

7. For worksheets dealing with essay answers, initially give page number beside questions. Gradually ease off on the numbering.

Skill Acquisition

1. Doing things in sequence is often troublesome. Breaking down the sequences into smaller groupings may help.

2. There is often difficulty in understanding basic directions such as left/right, clockwise/counter-clockwise, and turning things. It is better to use a fixed object in the room (windows, doors or other machinery) that a student can remember, rather than the designations "right" and "left." For example: "Move the wood toward the window."

3. Occasionally, a student will have a problem with the coordination of the right and left hand, two-handed tasks, or tasks involving one hand for safety while the other pushes. Hand and finger positions could be pointed out, approximated and practices. Tactile or other clues for hand and feet placement give extra help.

Behavior

1. Tell a student when he or she does something right, even when it is a small thing.

Tips for Memorizing

1. Put into a context. Always emphasize the main point when talking about the details.

2. Repetition helps in small frequent doses. Five minutes a day will be enough for rote memorization.

3. Some pressure (for short periods of time) helps the concentration necessary for memorizing. One minute speed drills for math problems after the initial practice period drills with the student correcting his/her own answers work well.

4. A good technique for memorizing vocabulary words or spelling is to:
   a. Write the word while copying it letter by letter from a model.
   b. Count the number of letters.
   c. Write the word in syllables. Say the syllables.
   d. Cover the word and write in syllables from memory.
   e. Compare and correct.
   f. Write the word from memory.
   g. Compare and correct and start the process again if incorrect.

   This whole process takes about one minute.

5. Mnemonics are one of the best devices. They may initially take some skill and imagination on the teacher's part to make them catchy and concrete.
   a. Make up a short rhyme.
      For memorizing the "ight" words in English make up a rhyme (there is only a small number of them). "The knights like to fight in their bright armor. They might be on the right in light before the night.

      The students can do an even better job of making a catchy and silly rhyme.
   b. Have the student picture what they need to know. To remember the days of the week (when you need to do something or when something is due):

      Monday * "money" (a pile of coins and bills)
      Tuesday * dues day (picture your dues being paid)
      Wednesday * wed day (picture a bride)
      Thursday * thirsty
      Friday * fry day (this was easier when it was fish day. Picture fried fish)
      Saturday * sat day (the day you sit -- see yourself sitting)
      Sunday * sun day (picture a bright sun)

      * Notice that this technique uses rhyming and visualization. Both of these are very useful devices.
   c. Draw a picture around a mathematical formula to cover the whole formula with a pattern so that the students do not leave any part of it out.

Tips for Memorizing (cont.)

5. d. Encourage students to fantasize and let their minds wander when they are trying to remember. What does the material remind them of? A device that they come up with will be long remembered. It works better if it's suggestive or silly. In carpentry, the student will remember the flashing, hips or underlayment better if they see the term visually with its suggestive meaning. It's important to picture the term in its real meaning with the memory device attached or superimposed.
   e. Rhyming words can increase in value if they are additionally connected to the words or idea you are trying to memorize. Using the word "statue" to help a student memorize "statute" is increased if you also note that a "statute" tends to be permanent and fixed like a "statue". (For this one, the Statue of Liberty works well because it's familiar).
   f. Repeat words or directions to memorize on cassette tape. Have students play during class period a while during other tasks.

Organizing and Structuring

1. Each student should have loose leaf paper of different colors or a spiral bound notebook for each class.

2. Folder with pocket in it to hold papers from each class. (A brand name is "Duo-Tang") This can be hole punched to fit in notebook.

3. A paper calendar for the loose leaf notebook of approximately the same size as the notebook. (Banks are a good place to obtain multiple copies). Place at front of notebook.

4. A plastic pouch of pens and pencils (always have two with you) that has holes to match notebook ring binders.

5. A code reminder to indicate when an assignment is due and another for a week before it's due.

Procedural Organization

1. When giving an assignment have the class mark their calendars immediately. To reinforce its use, have them refer to it daily.

2. Set time and quantity goals for each student and grade all aspects of the assignment, quality, time usage, and quantity.

3. Contract for behavior changes and have the contract go in the notebook.

4. Assign grades via work checks so that students have a sense of the "real world," and have a chance to use reading and math skills. Have them keep an "account."

Adapted from Ciaro, Karen. Methods the vocational or mainstreamed teacher can use to help the disabled student succeed CANH-GRAM. Sacramento, California, California Association for Neurologically Handicapped Children. July-August, 1979.

STRATEGIES TO HELP STUDENTS OVERCOME EMOTIONAL IMPAIRMENTS OF LEARNING

Initial Steps:

1. Find out what is causing the disturbance.

2. Determine what your values and attitudes are as a teacher.

   - How much emotional support will you?
   - When should you refer the student to a counselor or therapist?
   - Do you feel threatened, embarrassed or avoid emotional impaired students? Do you "wish" you could help but don't see how?

3. Determine your expectations of handicapped students.

   - Do you expect everyone in the class to behave in exactly the same way?
   - Are your expectations made clear or are they foggy or hidden?
   - Unclear expectations can lead students to feel that they've been tricked.
   - Have you modified your program so that the impaired may also succeed according to your expectations?
   - Do you expect the emotionally impaired to participate in class activities or to simply watch and listen?

4. Determine how well you communicate to your students. Example of uneffective communication strategies:

   - "He should know better!" (Teacher is embarrassed)
   - "How could she!" (Teacher feels hostile)
   - Yelling usually elicits hostility as well as passive or active aggression. (blocks communication)

Positive communication strategies:

"Maybe I need to remind him of what proper behavior is."
"She sure does like to test me. I guess it's time for another talk."
(These statements show a level of student acceptance and leave atmosphere for constructive improvement.)

Six General Steps in Communication:

1. Privacy - counsel a student privately so as not to increase embarrassment, tension or inferiority. Talk objectively and state your reason for concern. Ex. - "Lisa, I noticed that you interrupted me several times today. These interruptions may prevent other students from learning. I will be very happy to give you any extra help that you may need as soon as class is over."

2. Listen for Response - maintain good eye contact, don't grade papers or clean equipment, keep hands and feet quiet, give some sort of encouragement such as "uh huh," "Yes," "Go on."

3. Reflect - after listening, tell the student what you heard. Summarize it in one or two sentences letting them know that they were understood.

4. Invite student Comments - "Do you have any ideas how we could solve this problem?" Don't make the student feel like it's their sole responsibility. This sets them up for failure. But don't solve the problem for them either. Then they can say it's your fault if a plan fails. Help them to make their own decision.

5. Listen for Ideas - You are not an adversary or the decision maker. Listen and help the student think through the problem.

6. Clarify - make sure that you and the students set:
   (a) the changes that are expected
   (b) the time-frame in which to make the changes
   (c) the actions the teacher will take as a result of the changes

Five Phases of Problem Solving:

1. General Orientation - help the student state the problem and ensure the student that problems are a normal part of life.

2. Problem Formulation - encourage the student to write a clear statement of his/her problem. Include feelings only if they are relevant in the problem definition.

3. General Alternatives - encourage student to think of as many ways as possible to solve the problem and let them think through these solutions.

4. Decision Making - stress that they consider personal and social, short term and long term outcomes. There may not be a single right answer. Do not choose a solution for the student.

5. Verification - encourage the student to give the plan a good try. Behavioral changes take practice. Have learners record their progress on paper. If initial plan fails - encourage step 2 or 3.

A VISIT TO FOUR VOCATIONAL CLASSES

The semester is three weeks old. We will visit several imaginary vocational classrooms, observe students, and talk with teachers. We will see several situations in which emotional problems interfere with learning.

Gabe

The first classroom we visit is the student store, which serves as the Distributive Educational lab. The teacher, Ms. B., greets us and begins to show us around when a student comes in late. Ms. B. excuses herself and hurries over to talk to the young man. We notice that he looks terrible. His clothes are rumpled and dirty. He looks pale, has dark circles under his eyes and seems exhausted.

When Ms. B. returns, she explains that this is the first time Gabe has come to school for more than two weeks. She is concerned because she had Gabe as a student last year and he was always dependable. During his absence, he had done no homework and had missed an important quiz. The school had received no word from Gabe or his parents explaining his absences. Ms. B. was afraid he had decided to quit school.

Gabe has just explained that his mother had been badly hurt in an automobile accident. He has been trying to keep the family going. His two sisters are four years old and a brother is in fifth grade. He has been caring for and feeding the family, and visiting his mother in the hospital. Now his aunt has flown in from another state, and his father insists he return to school. His mother is still very ill and Gabe is worried about her. He is not sure whether he can function in school or not. As we are leaving, Ms. B. says she wishes there were something she could to help.

Mike

Next we go the Refrigeration and Air Conditioning lab. Here we find a confusing array of refrigeration devices. There are many different types of units, from home refrigerators to commercial walk-in coolers. Students are working intently on various tasks. They work singly or in pairs, apparently self-directed. The teacher, Mr. G., explains that the course is individualized. Each student has an assignment sheet which he or she is working to finish.

Mr. G. discretely points out Mike and explains that he seems to be having serious trouble learning. Mike is of average height and weight. He has blond hair and blue eyes. He is not noticeably different from other students, except that he is unshaved and his hair and clothes are sloppier than those of other students.

Mr. G. tells us about Mike's rocky beginning in class. During the first three weeks, Mike seemed to feel threatened by the class situation. Several times, when he didn't know what to do, he climbed up on a work table and read Black Beauty or Hardy Boys mysteries. Mike's behavior and appearance keep him from fitting in. Mr. G. says he is not accepted and that he is always alone before class and during breaks.

During the first weeks of each semester, Mr. G. assigns chapters from the textbook and gives quizzes on the material. Mike seems to be anxious during these tests. He always shows white knuckles, bites his nails, and taps his fingers. He tries to finish the tests, but says he goes blank and cannot think. He has failed both of the first two quizzes. Mr. G. is afraid Mike will never be employable.

Carla

Moving down the hall, we come to the Business/Office classrooms. Here we find students typing or working with calculators. One young woman has the contents of her purse spread on the table in front of her. She is applying make-up and trying to talk to her neighbor. One his way to greet us, Mr. C. says, "Carla! Put that stuff away and get to work!" Carla shrugs and looks annoyed.

Carla is Mr. C.'s biggest problem. She is often late or absent. When she does come to class, she must be reminded to get to work every few minutes. Her work is full of errors and omissions. She constantly disturbs others. During lectures, Carla doodles and daydreams. In small group activities Carla contributes nothing. She forgets to bring her book, pencils, notepad or assignments. Mr. C. says, "I don't know why Carla even signed up for this class! She obviously has no interest in being here. All she seems to care about is her appearance and her boyfriend. I don't know what to do with her. She's taking time and attention I should be giving to the other students."

Sheri

The last class we visit is in the Home Economics suite. Ms. J. is teaching a class on child care. As she comes to greet us, a thin young woman with stringy brown hair and mismatched clothes follows her closely. We hear the student asking, "Who are those people? Why are they here, Ms. J.?"

Ms. J. says calmly, "They're just visiting our class for a few minutes, Sheri. Go back and finish your project." Sheri turns away, but watches us instead of working.

After we tour the class, Ms. J. takes us to her office. It is a cubicle with a large window in one corner of the room. Inside, we can talk privately while still observing the class. Ms. J. tells us that Sheri is a special education student who has been labeled "emotionally disturbed". She is mainstreamed three hours a day, in the child-care class and lab, and in the gym. She spends the rest of the day in the resource room with the special education teacher.

Ms. J. explains that Sheri is doing fairly well in the class. However, she is too dependent on the teacher. She becomes frightened and upset by any change in the physical arrangement of the classroom or by any interruption of class routines. Ms. J. says, "She talks rapidly and follows me around the room. She asks question after question about the class, my home life, whether I know so-and-so. She asks about everything, but she doesn't seem to expect answers."

Sheri has also been known to have temper outbursts for no apparent reason, although none have occurred this year. She is not well accepted by the other students, though they do not tease her or treat her badly. They usually ignore her, but she does not seem to mind.

Ms. J. summarizes, "Sheri can do the work but it's difficult to get her to stay with anything long enough to finish it. She is so dependent on me that neither of us can get anything done."

During our tour we have seen some examples of students' emotions interfering with their learning. We will return to these classes in a few weeks to find out how these students are progressing, and what strategies the teachers have used to help them.

A FOLLOW-UP VISIT TO FOUR VOCATIONAL CLASSES

It has been eight weeks since our last tour of the vocational school. As we visit the same four imaginary classrooms, we can find out what has happened to the students we saw earlier.

Gabe

In the Distributive Education lab, we meet Ms. B. again. Gabe is in one corner of the room, preparing a poster to advertise a sale on greeting cards. Ms. B. reports that Gabe's mother is much better, and that Gabe has been back in school full-time for about six weeks. He missed most of his classes for about four weeks, and is still working hard to make up lessons he missed. Ms. B. says that after she learned the reason for Gabe's absence, she scheduled a conference with him. She expressed sympathy and assured him that he need not worry about D.E. until he was under less pressure at home. She encouraged him to stay in school, and promised to help him catch up when he came back. She also suggested that he talk to each of his other teachers and to the principal to explain the situation.

When Gabe returned, he and Ms. B. sat down together and planned an extra half hour of lab work during lunch for the rest of the semester. This time allowed him to make up the experiences he had missed. Since the class work has individualized, Gabe could pick up where he'd left off. By taking home learning packets, he had almost caught up already. Ms. B. says Gabe has had to drop one of his courses, but that the principal had assigned him to a study hall for that period. During this time, Gabe works to catch up in his two remaining, nonvocational courses.

As we are leaving, Ms. G. says, "You know, the most satisfying thing about this is that Gabe told me that he would have dropped out if it hadn't been for my support. What a nice thing for a teacher to hear!"

Mike

Moving down the hall, we enter the Refrigeration and Air Conditioning lab to find out how Mr. G. is doing with Mike, the student who seemed so anxious during the first weeks of class. Mr. G. greets us, but as we glance around the lab, we do not spot Mike. Mr. G. laughs and quietly points him out. He no longer looks different from the other boys. He is partially hidden in a group with three other students and is involved in dismantling an old freezer.

Mr. G. tells us that Mike has gradually improved. He has learned to like and trust Mr. G. As he has become more familiar with the lab equipment, machinery, and procedures, he has learned to work on a task throughout the class. Once he began to feel less anxious, his test grades started to improve. One test was on a movie that class members were allowed to view as many times as they needed. Mike scored an A.

Recently, Mr. G. has arranged for Mike to spend time in the developmental reading center, as well as having another class members, Erik, tutor him. This has helped Mike learn the material he was too anxious to concentrate on during the first weeks of class. Mr. G. has also promised Mike that he can retake those first quizzes to try to improve his grade average. Mr. G. feels hopeful Mike can soon complete the course and obtain in a co-op placement. He feels Mike might be better off in a maintenance job than in an appliance repair position, since coping with new situations may always be difficult for this student. Mike is eager to have a career in the refrigeration field, and Mr. G. suspects that Mike's future employer may have the most carefully maintained equipment in the county.

Carla

In the Business/Office classroom, we see Mr. C., but not Carla. Not wanting to be surprised again, we look carefully - still no Carla. Mr. C. explains that Carla is no longer in his class. He tells us that in talking to her, he learned that she signed up for the class because her mother wanted her to be a secretary. She said she was more interested in fashion, but did not want to disappoint her parents. Mr. C. referred her to a counselor. After meeting with Carla several times, the counselor arranged a conference for Carla, her parents, Mr. C., and the Fashion Merchandising instructor.

When her parents understood the nature of the fashion course and the extent of Carla's interest in it, as well as the extent of her disinterest in secretarial skills, they agreed to let her transfer into the Fashion

Merchandising course. Mr. C. says her new teacher reports that Carla is working well. She had to work fast the first weeks to catch up, but seemed willing to do all that was required. Her interest is still high, and she is rapidly acquiring the skills she will need to succeed in her chosen career.

Sheri

Our last visit is to the Home Economics suite to see Ms. J. and Sheri. Sheri looks up from her work, but does not leave her seat as we come in. Ms. J. gives her a nod and smile as she notices Sheri's improved behavior. Sheri's attention then turns back to her work.

Ms. J. tells us that she, Sheri, and Sheri's special education teacher have agreed on a contract which was helping Sheri learn to remain on task. She says that whenever Sheri attends to her work for 15 minutes without leaving her desk, she earns one point. Seven points is considered a perfect score for a two-hour lab, and Sheri has been earning six or seven points every day for three weeks now. Sheri has a graduated scale of rewards for the points she earns, and Ms. J. sends a note to the special education teacher each day to tell him now many points Sheri earned.

Ms. J. adds, "Sheri needs a little extra attention, but she seems to be working well in here. I have to remind her not to talk to herself while she works, and I need to be careful to warn her when something unusual is planned for class. Other than that, Sheri's really no more difficult to work with than any of my other students".

Note:

All of the information and examples used here taken directly out of Puzzled About Educating Special Needs Students? A Handbook on Modifying Vocational Curricula for Handicapped Students, University of Wisconsin-Madison. If you would like more information you may contact your school's special needs instructor, resource person or you may contact Dr. Connie D. Baggett at the Pennsylvania State University.

STRATEGIES TO HELP TEACH STUDENTS WHO ARE EDUCABLY MENTALLY RETARDED

1. You need to consciously train the person not just expose them to the material and expect that they learn it. All students, whether retarded or not learn better through training than exposure.

   - Set the criterion of success
   - Set the conditions under which it is to occur
   - Set the way you will measure this performance
   - Decide how you will teach the student

2. Remember that learning a skill is one process and performing it after learning is a different process.

   - A retarded student usually needs much more practice and trial runs, but this does not mean he will always perform that skill slowly and inadequately.

3. Evaluations and assessments of students should be directly related to training. Assessment should:

   - help the student explore vocational areas and assist him or her in making career choices
   - help the teacher determine what skills the student already possesses
   - determine what learning approaches are best suited to the student or are necessary for the student to learn at all
   - determine how well the student can perform a new skill or skills learned during assessment, and under what conditions this performance has taken place
   - provide direction for further programming, and offer precise suggestions concerning specific skills to be developed

4. For retarded students, a skill may require a number of steps. Some of these steps should even be broken down into substeps.

   For example. Circle the figure (below) which best matches this.

   For you, the correct response was easy but you used at least 2 steps to arrive at your answer.

   1. You matched relevant dimensions (triangular shape)
   2. You matched coloring (dark triangle)

   Retarded students do not automatically solve new problems systematically. You may need to train them to look for relevant dimensions, choose the right category (i.e. triangles) and then pick out the proper item in that category (i.e. shaded triangle).

Planning is an important step in any educational process. The question is, how do we begin?

1. Realize that the rate of learning for most individuals depends on their habits or strategies of selective attention, coding, and rehearsal of task properties. Therefore, you are to help the student focus selectively on the right information, retain it in some orderly way and apply what he or she learned.

2. The next step is to answer the following questions:

    1. What are your expectations for retarded students who enroll in your program? This includes your expectations about:

        - promptness (how late is "late"?)
        - extent and type of class participation
        - how you will be addressed
        - what types of behavior and language are acceptable
        - what types are not

    Be aware also if any preconceived notions you may have about individuals (retarded or not) because:

        - they match or vary from your standards of acceptable personal appearance
        - their cultural background is different from yours
        - you taught their relatives or siblings previously

    2. How much deviation from these expectations will you tolerate before taking action?

    3. What will you do when your tolerance level is exceeded?

    4. What will you do if your action doesn't work?

    5. What skills must be taught to make the student employable?

    6. Why does the person need to learn each of these skills? (If you cannot give a good answer for each skill, consider dropping it.)

    7. How do you intend to teach each skill?

    8. How will you know whether or not the student is learning the skills, or has learned it? Criteria include the quality of performance, the rate, and situational issues such as performing satisfactorily across locales, materials, and forms of direction. You should also find out whether or not the student will perform without being told to or watched by an authority figure.

    9. What instructional materials do you intend to use?

3. Next you need to decide if you need more information to answer these questions. (former instructors, parents, files, etc.)

Note:

Try not to make too many assumptions about what the student knows. (See the example of Nursing Assistance Occupational Task.)

Communicating with Retarded Students

1. BE CONCRETE AND REPEAT! - Use plain, direct statements. Be specific!

2. Do not be misled by "yes" responses. Many times a retarded student wants to please you and may even feel he or she does understand what you want. To be sure the message is clear, have the student repeat necessary information back to you, or show you what must be done.

3. When giving written directions it may be better to use lists instead of paragraphs. You could use a format similar to the recipe card below.

Recipe Model

A. Recipe Name	E. Ingredients
B. Cooking Temperature	F. Steps to Follow
C. Cooking Time	_ 1. _____
D. Number of Servings	_ 2. _____
	_ 3. _____

Here the student can check off each part as he/she completes it.

4. Edit the vocabulary level of the materials as needed.

5. When repeating the same directions, use the same words so they don't sound like new instructions.

6. Teach equivalent forms of the same directions. ("When I tell you to . . . . . it's the same as when I say . . . . . .")

7. Print directions on the board instead of writing them in script.

8. Feedback is very important! It's major purpose is to let the learner know what is wanted, and whether or not he or she is achieving it. Feedback can be provided during any stage of a project's completion. Feedback should be provided immediately! But overuse of the term "good" can drive you and the rest of the class crazy. This list may help to buffer the overuse syndrone.

Substitutes For The Word "Good"

That's really nice
Thank you very much
Wow!
That's great
I like the way you're working
Keep up the good work
That's quite an improvement
Much better
Keep it up
Good job
What neat work
You really outdid yourself today
Congratulations, You got __ right!
That's right! Good for you
Terrific
I bet you are proud of the way you worked (are working) today
Excellent work
I appreciate your help
Very good. Why don't you show the class?
Marvelous
Right on
Fantastic
All right!
Teach me (or __) how to do that
For sure
Sharp
That looks like it's going to be a great report
I like the way ___ is working
My goodness, how impressive!
You're on the right track now.
That's "A" Work
__ got right down to work
___ is paying attention
It looks like you put a lot of work into this
That's clever
Very creative
Very interesting
Good thinking
That's an interesting way of looking at it
Now you've figured it out
Thank you for (sitting down, being quiet, getting right to work, etc.)
Superior work
That's a good point
That's a very good observation
view
Thank you for raising you hand, Charles. What is it?
That's the right answer
Now you've got the hand of it
Exactly right
Nice going
You've got it now
You make it look easy
That's coming along nicely
I like the way the class has settled down

Another Note:

It is possible to give too much verbal feedback.

Forms of Nonverbal Feedback Might be:

- touching the student, or the task
- pointing
- blocking or stopping an error as it is developing
- guiding the learner's movements
- holding the learner's hands or fingers in the correct position until he or she begins to do it independently
- manipulating the learner's hands through the steps of a process
- squeezing his or her arm to indicate an incorrect movement is beginning

Skill Building

Many retarded students will not learn every aspect of a vocational area, so you may have to emphasize sets of skills, which could lead to specific jobs. Five basic skills which can be built in any program are:

1. self confidence/self esteem/self concept
2. observation/attention
3. retention/memory
4. generalizing (applying what has been learned)
5. problem solving

You may set up a list of specific skills that will be needed to help your student gain employment in your field of expertise. Remember that they will not be able to master all of the skills like the other students, but set priority goals for them to meet.

Class Management

Ideas which may be helpful in the actual mechanics of class management include:

1. Behavioral Contracts (2 types)

   a. "Contingency Management"-to develop desirable personal and social behaviors in a student and to eliminate undesirable ones. Don't attempt these contracts on your own. Use student services, the special education department and/or the special needs department depending on your school's structure and resources. This type of contract works best when done as a unified effort with all of the student teachers, supportives staff, then individual student and the the student's parents.

   b. Behavioral Contract set up by you and the student - This contract helps the student focus on his/her vocational goals, and specifies the tasks which must be achieved to reach them. The contracts time span and focus are set by the teacher and the student. An example follows in figure Seven.

Figure Seven

adapted
M-O-A
1-79

FOX VALLEY TECHNICAL INSTITUTE
HOME & CONSUMER SCIENCES DIVISION

MULTI-OCCUPATIONAL AIDE
Behavior Contract

Objective(s): To develop personal characteristics/traits with substantial progress as indicated by both student and instructor.

Student: _____ Date: _____

Counselor: _____ Instructor: _____

Instructions:

1) The student/instructor are to identify criteria below (1-16), which needs improvement and place an X in the appropriate box. This X will indicate desired level to be achieved.
2) The student/instructor will jointly assess the current level of behavior. This will be indicated by an Ø in the appropriate box.
3) The student/instructor will jointly assess the progress through individual meetings weekly.
4) The completion of the Behavior Contract will be completed upon reaching the desired achievement in (1) above and maintained as per the instructor and/or counselors approval.

	Introduced	Exposed	Slightly Involved	Moderately Involved	Competent-Employable (Low Productivity)	Competent-Employable (High Productivity)	Proficiency (considerable)	Proficiency (high)
		0	1	2	3	4	5	6
	N/A	N/A	N/A	N/A	C	B	B+	A

Class Management (Con't)

2. Team Teaching-Here a special educator and vocational educator teach a vocational course together.

3. Record Keeping-Accurate records provide you with feedback and the results of your efforts, help you to monitor each students progress and enable you to plan for each student systematically.

Figure Eight

Group Progress Report

COURSE: Metal Trades

HOUR: 3rd. & 4th. Period

GRADE: Senior Level

NO.	Name	Cut Threads on a Lathe	Keyways and Stopcuts on a Shaper	Operate A Surface Grinding Machine	
1.	Edward Batten				
2.	Hoyt Burnard				

Some teachers merely record a check mark in the space at the time the topic is covered. . . . .

Others draw a diagonal line in the space when the student is present for instruction . . . . .

Fill in the top corner when the skill is mastered, ...

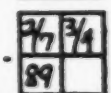
and either the final grade received, ...

or the points earned, are placed in the bottom triangle. . . . .

Some teachers desire even more information, so they divide the space into four parts. . . . .

When the student starts the topic, the date is placed in the upper left-hand corner. . . . .

When the topic is mastered, the date is placed in the upper right-hand corner. . . . .

Qualitative points are recorded in the lower left-hand corner. . . . . 

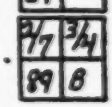
A grade which indicates the level of effort is placed in the lower right-hand corner. . . . . 

Figure Nine

Performance Test - Unit I

OBSERVER'S RECORD SHEET

On _____ _____
(Date) (Name

performed as indicated given the following verbal prompt.

"Brush your teeth. The toothpaste and toothbrush are on the counter."

Task - Toothbrushing	Accomplished	Not Accomplished	Comments
Obtain materials. (toothbrush, toothpaste)			
Pick up utensils. (toothbrush, toothpaste)			
Remove cap from toothpaste.			
Put toothpaste on toothbrush.			
Set down toothpaste.			
Wet toothbrush.			
Transfer toothbrush.			
Begin brushing.			
Fill glass.			
Rinse mouth.			
Empty glass.			
Rinse toothbrush.			
Return supplies.			
Turn off water.			
Replace cover on toothpaste.			

4. Tutoring

Peer tutoring - students help students

Staff tutoring - another staff member would help the student

5. Testing

If you use "hands on" competency based student evaluations you will probably be able to continue using them with few or no changes. In designing evaluation procedures:

- assess the reading level of any written material.
- minimize matching test. These instruments, with several questions and long lists of possible choices, are confusing for many retarded people. They tend to spend much unnecessary time looking at each item in the choice list when trying to answer a question. Multiple choice questions, or even fill-in-the blank questions, are preferred. The latter should be used only if the retarded person's study program was intense and structured.
- use practice tests to help retarded students who are very anxious.
- develop study guides for student use.
- while "hands on" tests are best, oral testing may be an appropriate choice in some situations.
- be certain your directions are clear and understood.

6. Grading

A "trails to criterion" grading system is preferred. In using this method, you set a standard of performance based on your experience. For example, on task A you may feel that anyone who can do it six times in a row without error or assistance has mastered it. For task B, you may feel that only those who can perform it 20 times in a row with no error or help have truly mastered it. This approach is compatible with competency-based instruction, and provides the most accurate description of what the retarded student can do, and under what circumstances.

If traditional grades are required, the grading system should:

- be based on each student's performance rather than comparison to group norms
- reflect the competencies developed by each student
- include provisions for reporting effort and progress as well as achievement
- reflect quality and quantity of work
- be comprehensive to the students and their parents
- provide for student involvement in determining his or her own achievements.

Employment Considerations

The ultimate goal of all vocational training for retarded students is, of course, employment. Many programs describe the establishment and operation of work study/work experience programs, job seeking skills training programs, and job placement strategies.

A key objective which has not received as much attention is helping retarded students keep their jobs once they get hired. Three basic problems often lead to loss of jobs for retarded persons: problems with supervisors, problems with co-workers, and poor quality and quantity of work performance. For some individuals, absenteeism and tardiness may also cause problems.

As long as the student is in your program, you influence the student's progress in all of these areas.

A prime consideration in communicating with the employer of your retarded graduate is the orientation process for both the employer and the graduate. The following approach is suggested by The President's Committee on Employment of the Handicapped and the National Association for Retarded Citizens in their Guide to job placement of mentally retarded workers (n.d.).

When a qualified mentally retarded worker is hired, the employee should have an early opportunity to meet his co-workers as well as his foreman or supervisor. Sometimes introductions can be made during the inital job interview. The new worker should also have enough time during the first few days on the job to become oriented to new surroundings.

Specific issues should also be clarified during this orientation process. Figure Ten below portrays a checklist (McCarthy, 1974) which describes them.

Figure Ten

Checklist for Induction and Orientation of the New Employee

___ Who is his or her immediate supervisor?

___ Who can he or she go to for help if he cannot find his or her supervisor?

___ What department, unit, or division does he or she work in?

___ Has the new employee reviewed his or her job description with the supervisor?

___ How does his or her work fit into the total operation of his or her department?

___ Has the new employee learned <u>where</u> he or she works (location of the facility and location of job site <u>within</u> the facility)?

___ Does the new employee know the starting time, lunch, break times and quitting times?

___ Does the new worker know what is expected in terms of work standards?

___ Does the new worker understand the probationary period and its implications?

___ Does the new worker know what clothing is appropriate for the job?

___ Does the new employee know where the lunch rooms, rest rooms, vending machines, smoking rooms, cafeteria and lunch counter are located?

___ Does the new employee know where to park (if relevant)?

___ Has the new employee learned whom to call, how to call them if a problem develops and he or she expects to be absent or late?

___ Does the new employee understand about pay periods (when they are, whether or not the first one is withheld so that pay is always 2 or 4 weeks behind, etc.).

___ Does the new employee know all relevant safety practices?

___ Have emergency procedures been discussed with the new employee?

___ Does the new worker know where bulletin boards are, how to use the information on them, or even how to read them?

___ Has the new worker been informed about regulations about receiving or making phone calls?

___ Does the new employee need any keys or other equipment? Has he or she received them?

Here is a modified unit which you may be able to adapt to your programs. You may even get some of your advanced students to help you with it.

Figure Eleven

CODE_____

VOCATIONAL AREA TRADE AND INDUSTRIAL EDUCATION

PROGRAM CONSTRUCTION TRADES

OCCUPATION MASONRY

INSTRUCTIONAL UNIT SPREADING MORTAR

PERFORMANCE TASK SEAT MORTAR TO TROWEL

PERFORMANCE-BASED TASK ACTIVITIES

YOU WILL:

1. LOAD A TROWEL WITH THE RIGHT AMOUNT OF MORTAR.
2. SNAP YOUR WRIST TO MAKE THE MORTAR STICK TO YOUR TROWEL.

Note:

All of the information and examples used here taken directly out of Puzzled About Educating Special Needs Students? A Handbook on Modifying Vocational Curricula for Handicapped Students, University of Wisconsin-Madison. If you would like more information you may contact your school's special needs instructor, resource person or you may contact Dr. Connie D. Baggett at the Pennsylvania State University.

WORDS

How To Spell	What It Means
TROWEL	A TOOL USED TO SPREAD MORTAR
MORTAR	A MUD-LIKE MIXTURE
MORTARBOARD	A PLACE THAT HOLDS THE MORTAR YOU WILL USE
LOADED TROWEL	A TROWEL THAT HAS MORTAR ON IT
SCOOP	TO PICK OR FILL UP. I SCOOP UP MY ICE CREAM WITH MY SPOON
WRIST	BONES BETWEEN YOUR ARM AND HAND THAT LET YOU MOVE YOUR HAND
SNAP	A QUICK WAY OF MOVING YOUR WRIST DOWN, OR UP
SUCTION	WHEN SOMETHING STICKS TO SOMETHING ELSE, LIKE A PLUNGER TO A FLOOR
AMOUNT	HOW MUCH
TOWARD	COMING AT YOU. THE SCHOOL BUS IS COMING TOWARDS ME
LIFT	MOVE UPWARDS. I WILL LIFT THE BOX
MUD	ANOTHER NAME FOR MORTAR- LIKE A NICKNAME

You Will Learn

1. HOW MUCH MORTAR TO PUT ON A TROWEL.
2. HOW TO SNAP YOUR WRIST WHILE HOLDING A TROWEL LOADED WITH MORTAR.
3. HOW TO CHECK TO SEE WHETHER OR NOT YOU CORRECTLY "SEATED" THE MORTAR TO YOUR TROWEL.

You Will Be Given:

A TROWEL

A MORTARBOARD WITH MORTAR ON IT

You Can Do This When:

YOU CAN PUT THE RIGHT AMOUNT OF MORTAR ON A TROWEL, AND SNAP YOUR WRIST WHILE HOLDING IT SO THAT WHEN YOU TURN THE LOADED TROWEL UPSIDE DOWN, THE MORTAR STICKS TO IT BEFORE FALLING OFF.

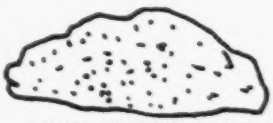
What You Do:

1. TAKE YOUR TROWEL OVER TO THE MORTAR ON YOUR MORTARBOARD.

   * REMEMBER: TO PUT YOUR THUMB OVER THE END OF THE HANDLE OF YOUR TROWEL →

HERE IS WHAT YOU WILL SEE:

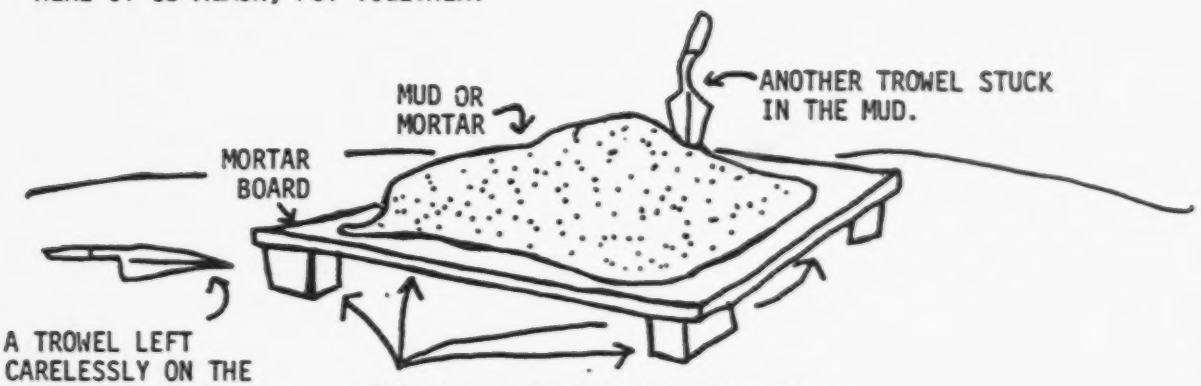
A TROWEL



SOME MORTAR, WHICH WILL LOOK LIKE GOOEY MUD AND SAND MIXED TOGETHER.

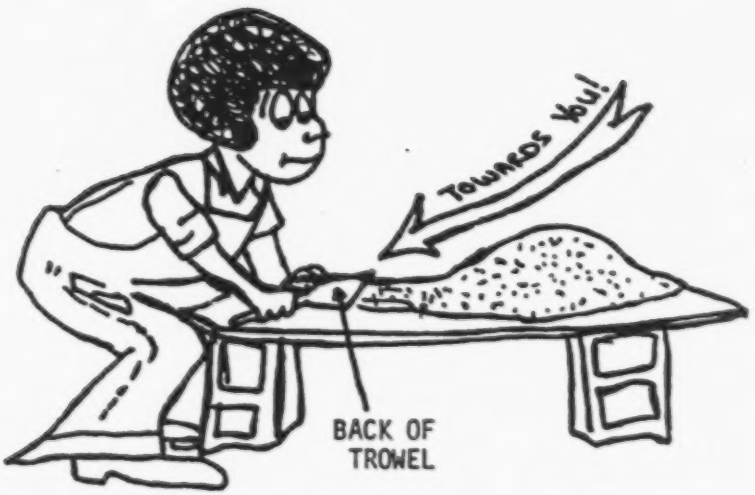
AN OLD BOARD, OR SOMETHING LIKE IT. IT HAS MORTAR SITTING ON IT.

HERE IT IS AGAIN, PUT TOGETHER:


ANOTHER TROWEL STUCK IN THE MUD.
MUD OR MORTAR
MORTAR BOARD
A TROWEL LEFT CARELESSLY ON THE GROUND BY SOME THOUGHTLESS PERSON.
OLD BLOCKS OF WOOD OR BRICK TO HELP HOLD IT UP.

2. BEND OR STOOP OVER THE MORTARBOARD SO YOU CAN GET TO THE MORTAR.

3. USE YOUR TROWEL SORT OF LIKE A SPOON. SCOOP SOME MORTAR UP ON THE TROWEL, LIKE YOU WOULD USE A SPOON TO SCOOP UP SOUP. DO NOT PUSH YOUR TROWEL AWAY FROM YOU. BRING, OR DRAG YOUR TROWEL <u>TOWARDS</u> YOU.



4. NOW LIFT YOUR TROWEL UP. THIS IS CALLED A "LOADED TROWEL". A TROWEL IS "LOADED" WHEN IT HAS "MUD" OR MORTAR SITTING ON IT.

Now You Know:

1. NUMBER THESE STEPS IN THE CORRECT ORDER:

   _____ LIFT THE TROWEL UP, WITH MUD ON IT.

   _____ GO WITH THE TROWEL TO THE MORTARBOARD.

   _____ DRAG OR BRING THE TROWEL TOWARDS YOU.

   _____ STOOP OR BEND OVER THE MORTARBOARD.

2. _____ WHEN SCOOPING UP THE MORTAR ON THE TROWEL, YOU SHOULD

   A) DRAG YOUR TROWEL TOWARDS YOU.
   B) PUSH YOUR TROWEL FROM YOU.

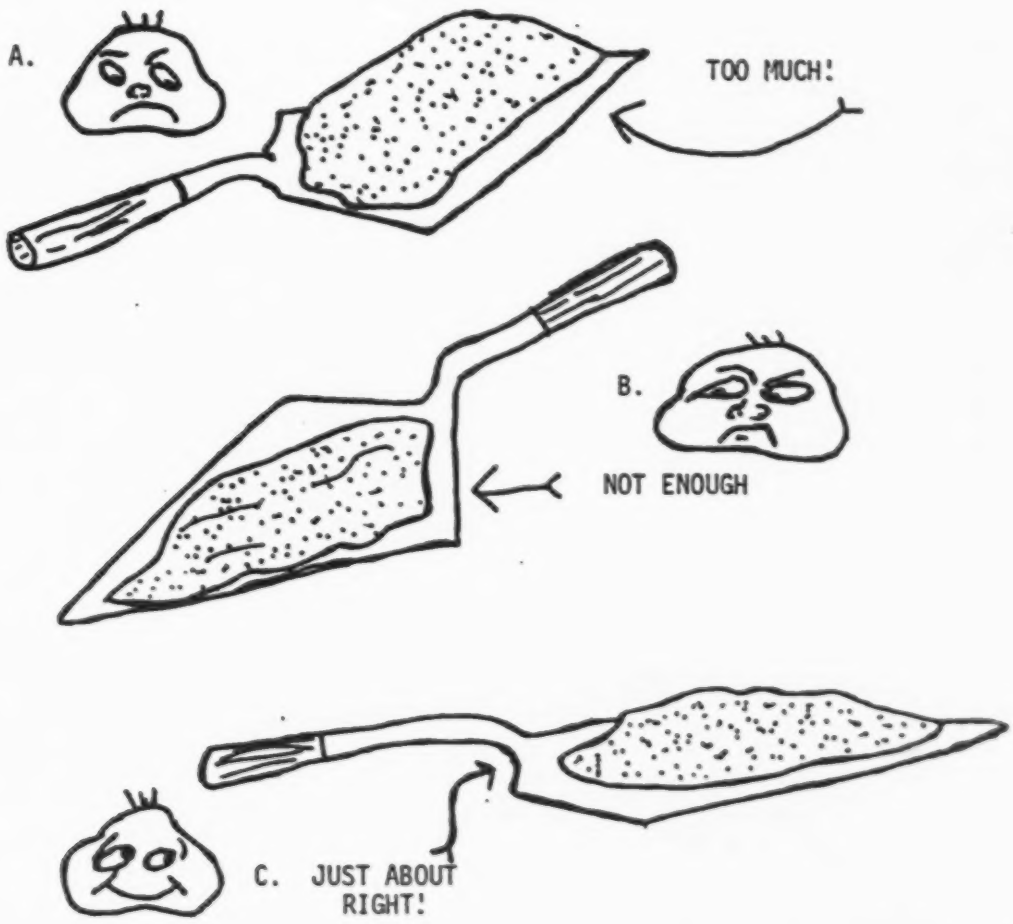
3. _____ SCOOPING IS MORE LIKE

   A) EATING SOME SOUP
   B) EATING A SALAD

What You Do:

1. CHECK YOUR TROWEL TO SEE THAT YOU HAVE ENOUGH MORTAR.

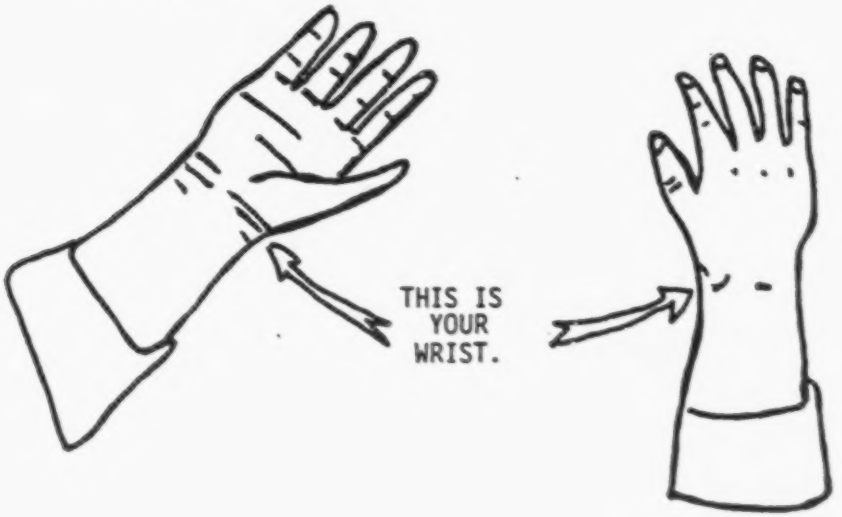
LOOK AT THESE PICTURES. THEY WILL HELP YOU DECIDE WHETHER OR NOT YOU HAVE THE RIGHT AMOUNT OF MORTAR ON YOUR TROWEL.



2. NOW, YOU MUST HOLD THE LOADED TROWEL, AND SNAP YOUR HAND AT THE WRIST.

REMEMBER HOW YOU DID YOUR HAND WHEN YOU PLAYED WITH A YO-YO?

TO DO THIS, YOU "POPPED" OR "SNAPPED" YOUR WRIST.



DO THE SAME THING NOW WITH YOUR LOADED TROWEL. BUT DO THIS ONE TIME ONLY. ONE TIME SHOULD BE ENOUGH.

FIRST, SLOWLY RAISE YOUR HAND JUST A LITTLE BIT.

NOW BRING IT DOWN AND STOP YOUR ARM SUDDENLY, BY STIFFENING YOUR WRIST. THIS IS "SNAPPING" YOUR WRIST.

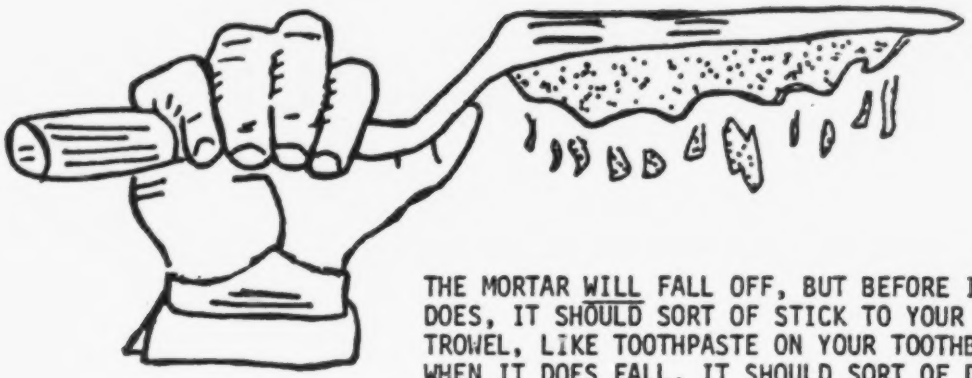
THIS IS CALLED "SEATING THE MORTAR TO THE TROWEL".

THIS MAKES A SUCTION. THIS MEANS THAT IF YOU DID THIS RIGHT, THE MORTAR SHOULD STICK TO YOUR TROWEL BEFORE DROPPING OFF, WHEN YOU TURN YOUR TROWEL UPSIDE DOWN.

3. CHECK YOURSELF!

HOW DO YOU KNOW IF YOU
DID IT RIGHT?

TURN YOUR TROWEL UPSIDE DOWN.



THE MORTAR WILL FALL OFF, BUT BEFORE IT DOES, IT SHOULD SORT OF STICK TO YOUR TROWEL, LIKE TOOTHPASTE ON YOUR TOOTHBRUSH. WHEN IT DOES FALL, IT SHOULD SORT OF DRIP OFF, LIKE RAIN.

IF IT SLIDES RIGHT OFF, OR SPILLS OFF LIKE SOUP, SOMETHING WENT WRONG. TRY IT AGAIN, UNTIL YOU CAN GET IT TO STICK.

GET HELP IF YOU NEED IT. WATCH A FRIEND WHO KNOWS HOW TO DO IT! TRY IT AGAIN UNTIL IT IS EASY TO DO!

Now You Know:

_____ HOW DO YOU SEAT THE MORTAR ON THE TROWEL?

A) ROLL YOUR WRIST

B) SNAP YOUR WRIST

_____ HOW DO YOU KNOW IF YOU DID THIS CORRECTLY?

A) THE MORTAR WILL STICK TO THE TROWEL BEFORE FALLING OFF

B) THE MORTAR SHOULD FALL RIGHT OFF THE TROWEL

NUMBER THESE STEPS IN THE RIGHT ORDER:

_____ TURN THE TROWEL UPSIDE DOWN

_____ HOLD THE LOADED TROWEL

_____ SNAP YOUR WRIST

_____ BE SURE YOU HAVE THE RIGHT AMOUNT OF MORTAR

CAN YOU ANSWER THESE QUESTIONS?

1. NUMBER THESE STEPS CORRECTLY.

   _____ LOAD THE TROWEL

   _____ HOLD THE TROWEL UPSIDE DOWN

   _____ SNAP YOUR WRIST

2. WHAT TWO THINGS ARE NEEDED TO ACTUALLY SEAT THE MORTAR TO THE TROWEL? _____ AND _____.

3. PUT TRUE OR FALSE.

   _____ YOU SHOULD CHECK YOUR TROWEL TO MAKE SURE YOU HAVE THE RIGHT AMOUNT OF MORTAR.

MULTIPLE CHOICE QUESTIONS:

4. _____ HOW DO YOU SEAT THE MORTAR TO THE TROWEL?

   A) SNAP YOUR WRIST

   B) ROLL YOUR WRIST

5. _____ TO LOAD YOUR TROWEL, YOU SHOULD:

   A) STOOP OR BEND

   B) STAND

MORE MULTIPLE CHOICE QUESTIONS.

6. _____ WHEN YOU LOAD YOUR TROWEL WITH MORTAR, YOU SHOULD

A) DRAG THE TROWEL TOWARDS YOU

B) PUSH THE TROWEL AWAY FROM YOU

7. _____ WHEN IS A TROWEL LOADED?

A) WHEN YOU TAKE THE MORTAR OFF IT

B) WHEN YOU PUT THE MORTAR ON IT.

8. _____ TO ACTUALLY SEAT THE MORTAR TO THE TROWEL, OR CHECK IT,

A) YOU SHOULD STOOP OR BEND

B) YOU SHOULD STAND

TIPS FOR WORKING WITH LEARNING DISABILITIES STUDENTS IN VOCATIONAL EDUCATION

The following suggestions are intended to help the learning disabilities student to succeed in vocational education. Not all suggestions are appropriate for any one student, nor are many unique to just the learning disabilities student. Our intent is to help all school personnel to be more aware of behavoirs that lead to failure for the LD student and frustration for teachers.

1. Be aware that LD students care but often are not aware of how they present themselves. They may look disinterested, slump in their seat, never volunteer, always sit in the rear of the room, etc. The reason for such behavior is usually a lack of self confidence, so help the student feel successful in your class. Speak with the LD teacher about strategies to accomplish this.

2. Students may be reluctant to ask for help or tell you of their reading disability or lack of comprehending directions. An informal contact after class asking him if he needs help or can do the assignment may open an avenue of communication. Let him know you understand his problem and you do not think he is 'dumb' because he has difficulty with academic skills.

3. A strict routine or structure during the class helps the student to organize himself and his work. He often is unable to quickly shift to a new approach. A brief explanation of the class plan for the period helps him to restructure his expectations.

4. Anything you can do to teach organizational skills will be helpful. Encourage students to carry a date book with assignments due noted. Post a calendar in the room with assignment due dates.

5. Changes in daily schedules for convocations, pep rallies or testing cause confusion. The student needs to be told step by step how his schedule will change. Ask him to repeat where he is to go and when or write out his schedule change on a card to carry that day.

6. Rules of the school and classroom need to be carefully stated in concise terms and probably repeated, i.e., you may not wear a hat in class, raise your hand if you need help, you may not talk to your neighbor, stay in your seat except when I ask you to do something, bathroom needs are to be taken care of before class, be in your seat when the bell rings.

7. LD students are used to much individual help and positive reinforcement as they work on an assignment. They need to know you are not unwilling to help them but that they are near adulthood and need to be responsible for their own work. Tell them when you will help and how much you feel you can give.

8. Copying material from the board is usually impossible. Be aware the student is not being lazy but the activity requires visual memory skills, writing skills, reading skills, visual tracking skills and organizational ability.

9. Many students have learned to block out information presented in class the minute the material becomes difficult. Draw the student back to the activity by trying to catch his eye, a smile, pat on the back or pointing to his work as you pass down the aisle.

10. The LD student tends to be easily distractable. The simpler the classroom environment the better. Seat him so that he will attend to you and the blackboard--not the bulletin board or other pictures, etc.

11. Encourage the LD student to participate in class discussions. He is more likely to be able to contribute opinions, past experiences, judgments, etc. than to recall specific facts. Many students who have reading/spelling/writing difficulties are well able to express themselves verbally. You can help him build self-confidence and to gain the respect of classmates by being able to demonstrate areas of strength.

12. Sometimes another student in class will be willing to help him with assignments and lab work or to comprehend social situations. Some LD students have difficulty with peer relationships. Anything you can do to encourage a potential friendship will help. Don't be reluctant to give the LD student feeding on what he may be doing to turn others off.

13. Some students are unable to immediately answer a written or verbal question but know the answer. Check with the LD teacher to see if he has an expressive language delay. LD students may be at a disadvantage on "pop quizzes". At the end of the quiz re-read the questions so students can check their answers. Slow processers may recall the answer the second time around.

14. Tapes and review sheets are invaluable for the LD student. The LD teacher can assist in getting your material taped. The goal is to help the student to learn material in your class - not to penalize him for being unable to read.

15. Some LD students cannot remember basic math facts yet can learn complex concepts if allowed to use a calculator. They need to advance to consumer and economic concepts that will help them in adult living. They need to become comfortable with using a calculator on a day to day basis and not be pointed out as needing to rely on a crutch. They already know they are different in their learning style and need to be accepted for their strengths.

16. Writing reports may be impossible. Try a substitute project such as a notebook, taping of interviews, oral report to the teacher, surveys, charts, etc.

17. If you are lecturing and expecting students to take notes give a competent student a sheet of carbon paper so that he can make a duplicate for the LD student. This is not to excuse the LD student from making an attempt but will provide him with another study resource.

18. Establish minimum requirements for passing tests and assignments. The LD teacher and the student need to be aware of the standards.

19. Try to make assignments on his level. Do not avoid individualizing because the student will feel he is different or others will complain. The LD student knows he has problems. Others are glad they do not have his problems.

20. Frequently a student who cannot express ideas in written form will be more successful if encouraged to type his assignment. He will probably need a longer time to do the assignment. The LD teacher can make arrangements for an available typewriter.

21. Directions frequently need to be repeated or simplified because the LD students may have difficulty remembering or sequencing verbal directions. Notes on the board serve as a reminder. An example is when students are told to turn to a particular page and then directions are given, frequently the student is having so much difficulty remembering what page he is to turn to he misses the directions. Written directions often are too complex if the student has poor reading skills. He will need to be told what to do.

22. Giving tests orally helps the student who cannot read. The LD teacher can assist you in this task. Some students need a copy of the questions as they are read to them. Visual and auditory input usually is the best approach.

23. Each student in special education has an individual educational plan written for him that specifies his strengths and weaknesses, and how he learns best. This information should be shared with you as well as any specific objectives relating to your class. The LD teacher will share this information with you and assist you in selecting appropriate materials.

Compiled by Dr. Cheryl Steczak

WORKING WITH THE SPECIAL NEEDS STUDENT

As you work with special needs (handicapped and/or disadvantaged) students, you will find yourself automatically proceeding to a higher level of individualized instruction. Your role will immediately become that of a diagnostician, tutor and manager of learning. With experience, individual planning with individual attention can become easy.

With students who are aware of their own goals, quantity and expectations will naturally vary. The student's reading, writing, motor and memorizing ability will exist in very different degrees by the time you meet him or her in a vocational setting. Therefore, you have different expectations and goals for students according to their ability.

Modifications of goals and materials are contingent on an open student-teacher relationship. Negotiate and evaluate goals constantly to have the student work at the level you feel he or she is capable of. At the same time, negotiate for alternative levels and types of performance to prevent frustration and loss of motivation. Although negotiation is time-consuming, it helps to keep communication lines open and motivation high.

Many instructors who work with special needs students do not realize that their efforts and hard work <u>now</u> will result in substantial savings for everyone concerned in the long run. Social rehabilitation or a sense of personal failure on the part of a student is far more costly than the time or energy it will cost you to help avoid such outcomes. You can do it!

There are many academic and vocational instructors who modify their teaching styles when dealing with students who have weak reading or writing skills, and never even realize it! Some modifications that have met with success are outlined on the next few pages.

In your classroom, you will have students reading at many different grade levels. To help match their differing abilities with your materials you might consider some of these suggestions:

1. Evaluate the readability (reading level) of all chapters of a text, manual, pamphlet or handout.
2. Have available materials at many reading levels - from elementary to college level.
3. Record lectures.
4. Have recordings of texts available. These may be obtained commercially or have students record them for extra credit.
5. Request easier-to-read materials from publishing companies.
6. Texts that are easier to read at any reading level usually have the following characteristics:
   a. pages that have enough blank space so as not to be confusing; this is especially true when there are pictures or diagrams involved.
   b. bold print or capital letters or different colored ink for important subject headings.
   c. vocabulary in bold print or defined on the same page it is used or at the end of the chapter.
   d. a glossary and index -- the glossary should include a guide to pronunciation.

There are several different methods by which you can determine the readability of instructional material. Check with the special needs personnel of your school, your vocational director or your State Department of Education consultant. Readability is not at all difficult to determine and will save you and your students hours of frustration and difficulty.

Readability is only one concern. Let's look now at the questions of goal setting, giving directions, presenting material, note taking, vocabulary, examinations, skill acquisition, behavior and evaluation and grading.

<u>Goal Setting</u>

* Allow each student to experience success based on his or her ability and, when necessary, modification of instruction.

* Tell students precisely what you expect them to memorize or know. Example: "You must memorize this procedure." "You don't have to memorize this; you will have the table to consult."

* Tell them precisely what you expect them to produce.

* See if they agree that they can meet your expectations.

* Tell the student each day or week that separate and discrete goals are expected.

* Set up contracts with students who are not producing.

* Establish short and long term goals for each student, based on the student's ability and continued progress.

* Decide whether it is memorization or understanding that is more important.

* Emphasize quality or quantity; not both.

Giving Directions

* Give only one or two directions at a time and check to make sure that they are understood.

* Ask students to put your directions into their own words.

* When there are written directions, try to make sure that each section of an exercise has its own directions; even if this means that you must duplicate them.

* Read directions to the class.

Presenting Material

* If you cannot read a mimeographed handout of your own, think about the student who has troubles without this added frustration.

* Break down complex ideas and tasks into smaller component tasks.

* When presenting material, explain a phrase or a sentence at a time, and pause. Slow down to 55 words per minute (and save!).

* Decide what prerequisite skills students need to successfully handle the material presented. Do your students have them?

* Write important phrases on the board as you say them. Seeing and hearing at the same times acts as a reinforcement.

Note-Taking

* Print information on one side of the board at a time. . .walk to the other side and continue. . .come back to the first side and erase. Then, start all over. This gives the student a chance to copy as much information as possible. Make sure to print. Teach your groups how to outline, scan for key information and locate answers in the material.

* Emphasize important material in some texts with a colored "hi-lighter." Let your weaker students use the texts that you have thus outlined.

* Decide what material the student really must know and what material must be memorized. If a student understands a concept, he or she will retain it better than if it is simply memorized.

* If students are required to copy outlines or long passages, either from lecture or from the board, mimeographing the material helps.

* It may be easier for the student to memorize material if it is mimeographed than just in lecture form.

* It is helpful for the instructor and the student to have the five or ten main points of the lesson (phrases are enough) in front of them during the class. Mimeograph and leave plenty of room between each heading for the student's notes. Instructors might ask the student to keep these in a folder or notebook. This collection of notes gives students with poor memory and poor organizational abilities something to both organize their thinking and help them remember.

* Outline the work for the entire week, day by day, including pages to read, homework assignments, projects, and so forth.

* Demand organization from the students; folders with pockets are cheap and re-usable each term.

* Use a student that you know is a good notetaker for getting information for one who is not. Use carbon paper, xerox, etc.

* Tape your lecture.

* It is often difficult for students with learning problems to generate a procedure operation on their own. It is helpful to return to basic principles which are involved in each new procedure.

* Pictures in textbooks help the student to visualize and conceptualize. However, it may be necessary to coordinate the picture with the part of the text it represents. Color coding may be helpful in these cases.

* It is important to associate symbols with concrete examples. Flash cards can be used with picture examples.

* Asking students to visualize and possibly act out the steps in an operation may assist them in learning.

* The ability to read charts and graphs may be a skill the student has never acquired. It may be necessary to teach this concept as a separate skill.

* Reviewing daily and going back to already-learned ideas helps students with learning difficulties. It is surprising how fast students may forget what they seemed to know well.

Vocabulary

* Define terms in words as simply as possible. If one word in a definition is not understood, the whole meaning can be lost.

* Use operation definition. That is, "what is it used for" can be most effective. Remember to evaluate on this basis, too.

* Use the words in the context of the job or other related area so that specific examples stimulate interest and motivate the student to learn and remember. Make it funny or absurd to help memorizing. Example: quenching treated steel makes it harder and "not thirsty." Draw some steel drinking.

* Deal with new vocabulary by relating it to words and terms that have already been learned.

* Always place vocabulary in the context of a sentence or paragraph.

* Have students put new vocabulary into their own words and give examples: "Tina drew on the metal with a scriber."

* If applicable, show the language root of the word, and divide the syllables according to pronunciation. Example: py rom et er - an instrument for measuring very high degrees of heat, as in a furnace or molten metal. "John measured the temperature of the furnace with a pyrometer." Pyro = fire, Meter = measuring device.

Examinations

* Recognition is easier than recall. Can you evaluate this way?

* Avoid essay questions, especially when there are students in the class with difficulties in writing effectively.

* Keep language simple and directions short. Avoid sentence structure which may be difficult to understand.

* Keep directions short, and repeat for each section.

* For fill-in questions, supply a word list. Students with learning difficulties often have word-remembering problems. They may know the concept and be able to recognize the word without being able to recall or spell it.

* For multiple choice, the longer component should be on the left and the shorter on the right.

* For worksheets dealing with essay answers, initially give page number beside questions. Gradually ease off on the numbering.

Skill Acquisition

* Doing things in sequence is often troublesome. Breaking down the Sequences into smaller groupings may help.

* There is often difficulty in understanding basic directions such as left/right, clockwise/counter-clockwise, and turning things. It is better to use a fixed object in the room (windows, doors or other machinery) that a student can remember, rather than the designations "right" and "left." For example: "Move the wood toward the window."

* Occasionally, a student will have a problem with the coordination of the right and left hand, two-handed tasks, or tasks involving one hand for safety while the other pushes. Hand and finger positions could be pointed out, approximated and practiced. Tactile or other clues for hand and feet placement give extra help.

Behavior

* Tell a student when he or she does something right, even when it is a small thing.

* Give praise for paying attention, eye contact, or other behaviors that are important to you. These might include good attendance or getting along with peers.

* Try to find a pattern to acting out behavior. Is it frustration with a particular type of task? Is it the level of difficulty of the class in general? Is it related to being grouped with certain students?

* Does the student get attention through inappropriate behavior?

* Is the student dependent on your approval?

* Set viable, tangible goals to use as rewards. Contract for them.

* Set up a buddy system for check-ups and approval.

Evaluation and Grading

* Use occupational readiness as a reward.

* Use progress and record charts.

* Try rewarding behaviors that are important (attendance, getting along with people) with a definite number of points toward the class grade.

* Reward affective behaviors like finishing work and paying attention, as well as cognitive behavior, like mastering course content.

The past few pages contain suggestions that instructors of special needs students have found to be helpful. They are here as points of reference for you. If you are interested, the Resource Section lists several publications related specifically to special needs students. In addition, the Record-keeping and Evaluation components in the next section of the handbook give examples of techniques referred to here.

WORKING WITH MR STUDENTS IN HOME ECONOMICS

1. Know the beginning level for each student and begin there, but challenge each to live up to his/her potential

2. Use a unit plan approach, emphasizing short units with immediate goals that suggest situations closely related to life outside of school

3. Give simple directions orally and repeat them as often as necessary (without showing impatience).

4. Provide a great deal of individual help at a time when he/she is ready. This may include doing something with him/her, rather than just showing or telling him/her how to do it.

5. Show the student what to do and how to do it. Demonstration and verbal discussions are not enough. It might help to have a EMR student assist in various steps of the demonstration. You could begin the step and have the student finish the step. This direct sensory experience makes it easier for him/her to carry out lab work later.

6. Demonstrations may need to be given in small groups and repeated as necessary. Demonstrate just one step at a time and have the students complete that step immediately.

7. Provide concrete and practical experiences. EMR students learn by doing.

8. Work-study and occupational programs are important. Jobs-housekeeping, nurse's aide, seamstress, alterations, and food services.

9. Field trips can provide concrete experiences.

10. Audio visuals are valuable only if used with proper instruction and careful follow-up.

11. Knowledge that is not useful will not be used. Be sure your daily plans include opportunities for students to practice what they are expected to learn.

12. You immediate aim is to help the student function with what he/she is learning, even though he/she lacks comprehension of it.

13. Since EMR students have difficulty with symbols, such as the names and amount of supplies, a "picture sequence" on the bulletin board be helpful. The student could check to see if his/her work is being done correctly.

14. Teacher-made worksheets and booklets are often less costly and more functional than published materials. EMR students may learn better from someone who knows them than from people who have written text-books. However, there are some materials available.

15. Materials that are developed should be simple, colorful, and perceptually honest. They should use short steps and provide for immediate, meaningful reinforcement. They should make use of several learning receptors--sight, sound, smell, movement, taste.

16. Praise, awards, and honor rolls motivate EMR students interest in learning.

17. Tests should be short. Oral tests, with questions read by teacher, are more helpful.

18. The teachers relationship with the student can be made or broken by a sense of humor. The teacher needs to be able to see something funny in a situation, to laugh with students but not at them, and to see the humor even if the teacher is the object of the joke.

19. Help the parents and other students to accept EMR students.

20. Condition the students to learn to be cooperative and well-mannered.

21. Nutrition is vital. When students are hungry and tired, they have difficulty learning. Their families may be uninformed or financially unable to help them develop good nutrition, health habits, and personal grooming.

Paraphrased from:

Hall, Olive A. and Beatrice Paolucci. Teaching Home Economics, John Wiley and Sons, Inc. : New York 1970 pp. 319-320.

Vocational Modifications for Special Needs

Academic Modifications

1. Emphasize concrete, meaningful content in your teaching. Since they can't cover as much material as normal students, concentrate on those aspects which are basic to further progress. Help them master a few skills rather than cover a great many poorly. Point out that new assignments are the result of satisfactory performance. "You've done a good job of ..., how would you like to begin ...?"

2. Structure direction sheets in detail, using brief, specific, step-by-step instructions. Systematic instruction and student success depend on a solid foundation of step-by-step mastered skills and concepts. If you allow the students to leave the concept before they have mastered it, they will usually fall further behind.

3. Provide materials and procedure options. Some students need a structured, well-sequenced program to achieve even low-level cognitive objectives, with concrete multisensory activities related to everyday experiences.

4. Use case studies to relate classroom activities to everyday experiences.

5. Don't talk down to them. Talk on a person-to-person level, just as you would with anyone, but be more specific, precise and clear.

6. Present information in various ways, repeating instructions as needed checking to see that they understand. Get as much feedback as possible, using leading questions to draw students out. Tape record the sequence of steps so they can use them without reading or asking someone.

7. Use a "buddy" to make an outline or carbon copy of notes, repeat directions, and clarify concepts. These buddies can be rotated on a weekly basis, but need to be advised on how much help to give and when to give it.

8. Demonstrate what is to be done. Use simple, step-by-step directions and visuals. DON'T JUST TELL. Adjust your pace.

9. Modify Reading Materials by:

   a. Use simple sentence structure: subject, verb, object. Avoid complex inversions, dangling modifiers, etc.

   b. Use a metaphor or simile the student knows to "tie down" an abstract idea. Use many examples to explain generalizations.

   c. Avoid large numbers and arithmetical symbols, e.g., make 25 percent "one out of four".

   d. Space words and lines far enough apart for easily recognizing a word as a unit.

   e. Use wide margins and well-defined headings.

10. Commercially prepared materials can be modified by:

    a. providing more skill practice - develop parallel activities with experiences to reinforce learning or to allow fuller development of a concept or mastery of a skill. Many problem learners will need repetition or overlearning. Use "hands on" experiences.

Academic Modifications con't.

b. incorporating audio-visuals based on student's learning style, interests and handicap - you can provide motivation and higher interest level by your knowledge of the student, e.g., record the directions on tape for the vision impaired student.

c. incorporating self correction methods so students receive immediate feedback and need not interrupt the class. Allow feedback and reinforcement time on the student's independent work.

d. taking workbooks apart, since it is easier for the student to handle a single page than it is to handle a book. If the book is school property, laminate or cover each page with clear contact paper. Answers can then be written directly on the page with grease pencils, wax crayon or washable felt tip pen. After the materials are corrected the marks can easily be wiped off. Preparing such special materials may appear time-consuming, but the results are durable and re-usable.

e. giving oral directions, one step at a time. Provide an extra copy of directions as you read them aloud. Combined oral, visual and tactile directions reinforce each other.

f. use outlines, either completely or partially filled in

g. using the tape recorder for recording information you will have to repeat. By using tapes for facts or drill work, you can free your time for other activities. Students can work at their own pace from a permanent file of tapes. Accompanying worksheets can be developed for a learning experience. Handicapped students will enjoy the change in presentation.

11. build carrels, cubicles, or partitions to modify an over-stimulating environment, or use resource center.

12. keep the work area simple and uncluttered

13. use drawer organizers

14. train in use of memory aids

15. Use Word Processing Programs that have built in spelling correction functions.

Visual Modifications

1. use raised line (embossed) drawings and three-dimensional models

2. have materials put into Braille form (volunteer agencies provide this service)

3. provide yellow acetate sheets to cover printed page and heighten contrast

4. permit the student to use special aids and devices, and recording equipment; Braille and large-print materials are bulky

5. modify the controls on tape recorders by adding Dymo Tape labels, using symbols instead of the whole word

6. post enlarged diagrams or frequently used manual sheets in the work area

7. modify apparatus so the measurements can be heard or felt rather than seen

8. provide relief marks on tools and storage bins - use dots of Elmers glue, or scratch indentations at key points, using a standard code. Attach rasied labels made on Dymo Tape; slash (/) = full unit, dot (.) = half unit

Visual Modifications con't

9. Place pieces of tape on knobs, controls, or switches to help student identify by touch. If two controls are close together, one can be notched or roughed with a file, or substitute a knob of a different size, shape, or texture.

10. Make writing guides (stencils for check writing and other forms). Cut from cardboard, using an X-acto knife. Attach Dymo labels (or Braille) to the cardboard to indicate the information to go in the various spaces

11. Orientation and mobility are very important to these students. Auditory cues and memory of the placement of objects and furniture help them move around. Allow them to explore the classroom, work area, and equipment. Keep them informed of any change in arrangement of furniture or equipment. Encourage classmates to keep aisles clear and to close doors completely, or leave them wide open - not partially open.

12. Design modifications to allow the other senses to compensate for any vision loss. Use multi-sensory materials so that all possible avenues of input may be explored. The primary input of the student will be auditory, in order to overcome the slower reading rate.

13. Commercially Available Equipment and Devices:

    a. calculators with large bottons and displays, or "talking" calculator

    b. tape recorders (with relief control markings)

    c. typewriters with large, clear type

    d. The Speech Synthesizer transmits digital input into audible signals

    e. Braille micrometers, caliphers, rulers, protractors, vernier rules, transformer testers, shorthand machines, and steno-type devices

    f. guards and feed indicators on lathes and other industrial machines

    g. equipment for preparing raised markings

    h. talking cash register

    i. Digital Indexing Tape Recording System - allows a student to rewind an audiotape and stop at a certain point, decreasing search time when reviewing taped notes

    j. telephone aids include:
        - Dataphone service - links phones to teletypewriters and tele-writing devices
        - Code-Com set - converts sound into visual and tactile signals
        - Bone conduction phone receiver - transmits sound vibrations to the inner ear
        - headset amplifiers, extra loud or restricted frequency bells, or an attachment that converts sound into light flashes and vibrations

    k. reading stands or easels to make reading less tedious

    l. The KURZWELL READING MACHINE converts standard English text on a computer into easily understood speech. The machine is attached to a computer terminal and has an unlimited vocabulary.

    m. The OPTICON (Optical to Tactile Converter) consists of a book-size electronics component and a hand-held probe about the size of a pocket knife. The student moves the probe along a line of type which is converted into a pattern that the student can feel. Attachments and companion equipment convert it into

Visual Modifications con't.

m. sound. Similar machines (Stereotoner, Optophone, and Visotactor) convert print into sound.

n. Viewscan

o. Versabraille

Hearing and Speech Modifications

1. Make more complex notes on chalkboard.
2. Modify devices to enhance sound (telephone receivers).
3. Avoid metal partitions which cause noise problems through transmission and impart sounds.
4. Connect bells to a light that turns on when the bells ring (typewriters, class bells, timers, fire alarms).
5. Connect a red light to the switch indicating when a machine is in operation.
6. Attach flashing lights to auditory safety signals
7. lapboard or communication board
8. Electronic larnyx - amplifies softly-spoken speech, producing a normal-sounding voice - it allows the student to operate normally in almost any situation where speech is needed.
9. Phonic Ear - an FM amplification system, in which the teacher wears a microphone connected to the earpiece worn by the student.
10. Face the students when speaking. Explain what you have written on the chalkboard after you turn around and face the class - not while writing.
11. Speak clearly at a moderate rate, avoiding exaggeration or overemphasis which distorts lip movements. Use short sentences. Exaggerated speech and mouth movement are distracting.
12. Rephrase any sentences the student doesn't seem to understand. When rephrasing a new idea, use different words. This is more effective than exact repetition, since the student may have missed a word or words in the original meaning.
13. Don't stand with back to a window or other source of light. Your face will be in the shadow. Light should shine on you from the front.
14. Seat students close to you since they listen with their eyes as well as with their ears. They can lip read best within 10 feet of the speaker, make better use of residual hearing, and maintain contact with the classroom activities.
15. Use a variety of visual aids and written materials. It is their primary means of receiving information. Make your chalkboard notes complete, or provide hand-out materials. The use of chalkboard can eliminate confusion and reinforce concepts dismissed with no demands on you.
16. Provide outlines and vocabulary lists for new and/or complex topics.
17. Use an overhead projector instead of the chalkboard, to increase the amount of time you face the class. While using the overhead you face the class in normal light to write, point to, or talk about the material you are projecting. This allows the hearing impaired students to watch your lips as you talk and at the same time they can look at the images projected. By keeping the transparencies, you can continue or review the material later without rewriting it on the board.
18. When using a film, filmstrip or lecture, give the student a brief outline, or the script. A flashlight will enable the student to follow the script in a darkened room. The student can be seated near the speaker when a film is shown.

Hearing and Speech Modifications con't.

19. Be patient as the student speaks. Encourage speech. Sometimes these students make unintentional noises and speak too loudly or not loud enough. Discuss "too loud" or "too soft" speech problems with the hearing impaired students to help them avoid dull or expressionless speech habits. Overlooking or excusing such behaviors, although the students are not aware of them, denies them learning opportunities. Encourage other students to speak with them, not say things for them.

Physical Modifications

1. Improve grip of hand-held utensils with rubber tubing, Styrofoam hair curlers, adhesive-backed foam rubber, dental acrylic, rubber bands, small rubber bands, or wrap with electrical tape.

2. Reposition the control so it can be operated with the knee, foot, hand, elbow, chin, or head, as needed by the individual using it.

3. Raise or lower equipment to bring the work within the student's reach.

4. Remount equipment - move it from center to a corner of a bench.

5. Provide grocer hooks or long-handled barbecue tongs for reaching items.

6. Provide surgical forceps for grasping paper, plastic sheets, manuals.

7. Provide a simple stick to push buttons, levers, or handles

8. Construct a lip around edge of work surface to keep materials from falling off.

9. Drill a hole in an object so it can be grasped by inserting a finger, mouth-stick or prosthesis tip

10. Provide rubber finger pass for grip.

11. Slip pen or pencil through a rubber ball or hard foam for grip.

12. Enlarge copies of portions of manuals to post on wall for quick reference.

13. Tape paper to the writing surface; use clipboards to hold writing paper or pages in place.

14. Make a wire frame to hold paper upright as it emerges from the typewriter carriage.

15. Adjust touch control of typewriter.

16. Slip a tube over the carriage return lever of a typewriter carriage arm for easy reach of the student.

17. Attach typing sticks to holders that fit in the hands of those capable of using their hands but not their fingers.

18. Place a box in front of the typewriter, so the cerebral palsied can rest hands on the box for better control.

19. Provide wheeled cart or other aid for easier movement.

20. Make devices for lifting objects from high or low shelves (objects can be grasped with opposed suction cups mounted on metal fingers at one end of a tube).

21. If a student requires significantly more time to complete a written assignment, reduce the length of the assignment so it is not physically overwhelming.

22. Make provisions for those who need rest at intervals throughout the day to minimize fatigue factors.

23. Use Specially Designed Commercially Available Equipment and Devices:

    a. semi-automatic dialers - for those lacking the dexterity needed to use the usual dial or pushbuttons on telephones (they dial numbers from pre-programmed cards)

Physical Modifications con't.

23. b. headsets and mounts that hold handsets, which eliminate the need to pick up the receiver - or enlarged "touchdown"

c. speakerphone system - allows use of the phone by persons with limited manual abilities

d. electric, self-correcting, automatic return typewriter with keyguard to increase accuracy and stability

e. tape recorders with large buttons

f. bookstands with automatic page turners for reference books

g. front open desks for one-handed students

h. a typewriter with a rearranged keyboard for one-handed typing

i. an arm rest frame which gives the cerebral palsied student a rest surface in front of and at the same height as, the typewriter

j. a plate to be attached to the typewriter (drill two holes in the frame of the typewriter, and screw the plate in place), students rest their fingers on the plate and slide up to the hole of the key they want to depress

k. a permanent plate over the keys to help control

Taken from: Mainstreaming Special Needs Students Into Vocational Education. Center for Vocational Personnel Preparation, Indiana University of PA, 1980

IDEAS/EXAMPLES ON ALTERNATIVE METHODS OF TESTING

I. Format Considerations

Original Format

1. Matching or Definition

Format Change

1. Group the matching sets in small groups (5-8) instead of an entire page. Read each item aloud.
2. Give the student the option of taking the test orally.
3. Print only the words on the page and give the definition orally. Assign each definition a number. Have the student write the number of the definition by the word that corresponds to the definition.

Example or Explanation

Conventional Matching:
(Use the letters from the Right Column to match the blanks in the Left Column. Use an answer once.)

_____1. Sugar in urine	A. Oliguria
_____2. Blood in urine	B. Hematuria
_____3. Scanty urine	C. Nephritis
	D. Uremia
	E. Glycosuria

(More answers than required to prevent guessing.)
(Can also reverse process; i.e., more items than answers.)

Modified Matching:

_____1. Sugar in urine	A. Oliguria
_____2. Blood in urine	B. Glycosuria
_____3. Scanty urine output	C. Hematuria

(Same number of answers as number of items; allows for guessing by process of elimination.)

Original Format

1. Fill in the Blank or Completion

Format Change

1. Give the test orally.
2. Provide key words on the page to aid the student with spelling. Or, do not take points off for spelling errors.

Example or Explanation

Conventional Completion:
The hormones which control urine production are_____and_____, and the effect of each hormone is_____and_____.

Example or Explanation (cont.)

Modified Completion: (Cross out incorrect answer)
1. The hormones which control urine production are (ADH) or (LDS) and insulin (insulin) or (pitocin).
2. The effect of one of the hormones in No. 1 above is to (control water balance or (control bladder disease).

Original Format

1. Multiple Choice

Format Change

1. Read the test questions aloud as well as all the answers. Allow the students to select an answer as you read.
2. Try asking the questions orally. It may be easier for the student to come up with the correct answer when the other answers are not there to cause confusion.

Example or Explanation

Conventional Combined Multiple Choice:
(Write one best answer in blank preceding the questions)

_____Normal urine is composed of the following substances:

1. Urea	A. 1, 3, 4
2. Ammonia	B. 1, 2, 4
3. Blood Cells	C. 2, 3, 4
4. Uric Acid	D. All of the above

Modified Single Response Multiple Choice:

_____Normal urine is composed of all EXCEPT ONE of the answers below:

A. Urea
B. Ammonia
C. Blood Cells
D. Uric Acid

(Emphasize key words in the question.)

Original Format

1. True - False

Format Change

1. Use only simple, straight forward statements. Avoid double negatives.

Example or Explanation

Conventional True - False (T or F):

_____ The part which is NOT a portion of the nephron unit is the renal pyramid. (Double negative)

Example or Explanation (cont.)

Modified True - False:
(If statement is false, write in the correct answer and put "F" in front of the question.)

_____One part of the nephron unit is the renal pyramid/_____.

Original Format

1. Spelling Tests

Format Change

1. Print all of the words on the paper and ask the student to say each word as you point to it.
2. Print all of the words on the page and give the students oral instructions such as circle torque wrench, put an X before ratchet, draw a line through point setter, put a check after dwell gauge, etc.
3. Print all words on a page. Give oral instructions as above but instruct students to assign specific numbers to each word.
4. If possible, use an identification test for their vocabulary words.

Example or Explanation

1. (torque wrench)
   X ratchet
   ~~point-setter~~
   dwell gauge✓

2. 4 torque wrench
   2 ratchet
   1 point setter
   3 dwell gauge

Original Format

1. Essay

Format Change

1. Assign the student a secretary (a student) to read the test questions as well as to write down the student's response.
2. Tape record the test questions. Have the student use another tape recorder to tape the responses.
3. Consider allowing the student to demonstrate knowledge or ability using other evaluation techniques.
4. Have the student give you the answers orally.

Example or Explanation

Conventional Essay:
Describe in detail the function of the urinary system. Include the other excretory systems besides the urinary system per se.

Example or Explanation (cont.)

Modified Essay or Short Answer:

1. List briefly four important functions of the urinary system:
   a) _____
   b) _____
   c) _____
   d) _____

2. List three other excretory organs besides the urinary system:
   a) _____
   b) _____
   c) _____

Original Format

1. Identification or Labeling

Format Change

Use testing procedures which ask the student to "point to" or "select" the correct item described.

Example or Explanation

Give the student a diagram, model or object to be labeled. Instead of requiring written responses:
   a) Have the student point to each part as you say its name.
   b) Point to each part and ask "What is this and what does it do?"

II. Test Adaptations

Adaptations	Example or Explanation
1. State Questions as simply and briefly as possible.	1. Use 1- or 2-syllable words whenever possible. Use short, simple sentences. 2. Use concrete terms.
2. Avoid asking questions that require multiple answers.	Original Question: Sometimes, strong storms called typhoons strike the island of Japan. What is a typhoon? How does it differ from a hurricane? What causes such huge storms? What happens to typhoons after they move over land? When do typhoons usually occur? Adaptation: Sometimes strong storms called typhoons strike the island of Japan. 1. What is a typhoon?_____ 2. What causes a typhoon?_____ 3. When do typhoons usually occur?_____ 4. What happens to a typhoon when it moves over land?_____ 5. What is the difference between a typhoon and a hurricane?_____

II. Test Adaptations (cont.)

Adaptations	Example or Explanation
3. Assign point values to each question and print it on the test.	This strategy helps the student budget time when taking the test. Also, state the maximum number of minutes the student should spend answering each question.
4. Try to balance the test items with regard to format and value.	1. This will give the student who has problems in multiple-choice sections a chance to pass on the basis of ability in other sections. 2. If you notice that a student responds much better to one type of test than another, consider preparing tests for that student in the format which assures the best performance.

III. Minimizing Stress and Strain

Potential Problem	Possible Solution
Distractions: Visual	1. Place the student somewhere in the room where movement and activity outside the room is least noticeable. 2. Minimize movement and activity in the room during testing sessions.
Distractions: Auditory	1. Try to give all oral instructions at the beginning of the test instead of interrupting the testing session with additional information. However, always encourage individual questions which can be answered quietly at the student's desk or in the front of the room. 2. Require all students to remain quiet until the testing session is over for everyone.
Short Attention Span	1. Keep your tests as short as possible. Give several short tests instead of one very long one. 2. Give short tests over recent material daily or weekly.
Fear of Testing Situations	1. Avoid timed tests. When a timed test must be used, give point values for each question on the test and announce before the test how many points will be necessary for a passing grade. Instruct students to answer the questions with the higher point value first.

III. Minimizing Stress and Strain (cont.)

Potential Problem	Possible Solution
	2. Give the students other options for improving their grades if they perform poorly on a test. 3. Always give one or two bonus questions for students who have problems on a specific section.

Source: Regan, Madelyn K. Vocational Education Inservice Training. Kansas City, Kansas: Department of Special Education, University of Kansas, 1979.

Adapted by: Helen Sobehart, Assistant Director, W. Pa. Special Education Regional Resource Center, Gibsonia, Pa. 1981.

Handicap Check List

If you were ever asked if you are handicapped, you probably answered, "No." It is quite rare for an individual to consider himself/herself as handicapped, but in a real sense we are all handicapped in some way. Persons who are normally classified as handicapped are not greatly different from you and me.

People who work with handicapped persons know that the first and the most difficult problem is to get the handicapped person to accept and understand the handicap as a reality. It is hard for any of us to recognize and accept a handicap, limitation or defect. However the following inventory check list may assist you in looking at possible handicaps. Put a check mark beside the items you feel might limit you in certain circumstances. Check only the items that apply to you personally.

_____ Awkward
_____ Bad reputation
_____ Color blind
_____ Drug dependent
_____ Emotionally dependent
_____ Forgetful
_____ Hearing loss
_____ Painful joints
_____ Pessimist
_____ Poor locomotion
_____ Poor teeth or dentures
_____ Quick-tempered
_____ Short
_____ Shy

_____ Imperfect eyesight
_____ Intolerant
_____ Low social status
_____ Minority
_____ Obese
_____ Often sick or ill
_____ Significant weakness
_____ Stubborn
_____ Tall
_____ Unattractive
_____ Undereducated
_____ Unloved

These 26 handicaps are only representative of the many that might have been inventoried. These 26 are sufficient to convey the idea that each of us is probably handicapped in some way and that these limitations could limit us in certain circumstances. However most of us do not allow our defect(s) to seriously handicap us. But do you have an objective appraisal of how limiting your defect(s) might be? Even your best friends usually won't tell you for fear of hurting your feelings.

Certain defects or deficiencies can be more or less serious depending upon a number of factors: (1) our attitude toward it; (2) our ability to recognize it and work around it; (3) the kind of work we do; (4) the presence of compensating strengths; (5) how others and our culture react to our handicap.

Handicapped? It will depend upon you.

Who Are the Handicapped According to P.L. 94-142?

Deaf

The child is impaired in processing linguistic information through hearing, with or without amplification, which adversely affects educational performance.

Deaf-Blind

Concomitant hearing and visual impairments which cause severe communication and other developmental and educational problems that cannot be accommodated in special educational programs solely for deaf or blind children.

Hard-of-Hearing

A hearing impairment, either permanent or fluctuating, which adversely affects educational performance but is not included under the definition of "deaf."

Mentally Retarded

Significantly subaverage general intellectual functioning along with deficits in adaptive behavior and manifested during the developmental period, which adversely affects a child's educational performance.

Multihandicapped

Concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically handicapped, etc.) which cause severe educational problems that cannot be accommodated in special education programs solely for one impairment. Does not include "deaf-blind".

Orthopedically Impaired

Severe orthopedic impairment which adversely affects a child's educational performance. Includes impairments caused by: Congenital anomaly, disease, amputation, fractures, burns and cerebral palsy.

Other Health Impaired

Limited strength, vitality, or alertness due to chronic or acute health problems such as heart condition, tuberculosis, rheumatic fever, asthma, sickle cell anemia, epilepsy, etc., which adversely affects a child's educational performance.

Seriously Emotionally Disturbed

Child exhibits one or more of the following characteristics over a long period of time and to a degree which adversely affects educational performance; inability to learn which can't be explained by intellectual, sensory or health factors; inability

to build and maintain satisfactory interpersonal relationships; inappropriate behavior or feeling under normal circumstances; pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms or fears associated with personal or school problems. Includes children who are schizophrenic or autistic. Not the socially maladjusted unless it is determined they are seriously emotionally disturbed.

Specific Learning Disabilities

Disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written. Problems in listening, thinking, speaking, reading, writing, spelling or mathematical calculations. Includes: perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Does not include: problems which are a result of visual, hearing or motor handicaps, of mental retardation or of cultural, environmental, or economic disadvantage.

Speech Impaired

Communication disorder such as stuttering, impaired articulation, language impairment, or voice impairment which ad-

versely affects educational performance.

Visually Handicapped

Visual impairment which adversely affects educational performance, even with correction. Both partially seeing and blind.